Mark J. Young
Fla. Bar No. 0078158
Pro Hac Vice
myoungpa@gmail.com
MARK YOUNG, P.A.
1638 Camden Avenue
Jacksonville, FL 32207
Tel.: 904-996-8099
Attorney for Oceanic Production Equipment, Ltd. and Jordan Klein Sr.

David A. Peck
SBN 171854
COAST LAW GROUP LLP
1140 South Coast Highway 101
Encinitas, California 92024
Tel. 760.942.8505 x108
Fax 760.942.8515
Email dpeck@coastlawgroup.com
Attorneys for Oceanic Production Equipment, Ltd. and Jordan Klein Sr.

James E. Doroshow (SBN 112,920)
jdoroshow@foxrothschild.com
FOX ROTHSCHILD LLP
10250 Constellation Blvd., Ste 900
Los Angeles, CA 90067
Tel. (310) 598-4150
Attorney for Defendants Oppenheimer Cine Rental, LLC, Oppenheimer Camera Products, Inc., and Marty Oppenheimer

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

VOICE INTERNATIONAL, INC., a California corporation; DAVID GROBER, an individual,

Plaintiffs,

vs.

OPPENHEIMER CINE RENTAL, LLC, a Washington corporation; OPPENHEIMER CAMERA PRODUCTS, INC., a Washington corporation; MARTY OPPENHEIMER, an individual no there is no statementl; JORDAN KLEIN, SR., an individual; JORDAN KLEIN, JR., an individual; JOHN DANN, an individual; Mako Products, an unknown entity, Oceanic

Case No. 2:15-cv-08830-JAK-KS

The Honorable John A. Kronstadt, Courtroom 10B

DEFENDANTS' JOINT STATUS REPORT

Production Equipment, Ltd., a Bahamian company; and DOES 1-10, inclusive,

Defendants.

I. BACKGROUND

On July 23, 2019, Defendant Jordan Klein Sr. ("Klein Sr.") filed a Request for Ex Parte Reexamination No. 90014342 ("Reexamination"), which challenged the validity of every asserted claim (i.e., claims 1, 3, 4, 14, 32, 35 and 38) of US Patent No. 6,611,662 ("the '662 patent"), which is the subject of this lawsuit. On September 10, 2019, the US Patent and Trademark Office ("PTO") granted the Request for Reexamination against every asserted claim. [Dkt. 379-1 pp. 81-109]. On December 16, 2019, in a compelling 135-page Office Action, the PTO rejected every asserted claim of the '662 patent [Dkt. 460-1].

In an Order [Dkt. 485] dated April 15, 2020, the Court stayed the captioned matter pending the Reexamination. The Court ordered the parties to file a Joint Report every 90 days as to the status of the Reexamination, or within 10 days after the completion of the Reexamination.

The '662 patent expired on May 26, 2020.

The parties filed a joint status report [Dkt. 486] on July 17, 2020. After reviewing the July 17th report, in an Order [Dkt. 487] dated July 20, 2020, the Court ordered a further periodic report regarding the status of the Reexamination on or before October 15, 2020.

This Status Report informs the Court of a significant recent development in the Reexamination and satisfies the reporting required by the July 20, 2020 Order [Dkt. 487].

II. STATUS UPDATE

In a Final Office Action dated September 28, 2020, the PTO rejected every claim asserted in this lawsuit. The Final Office Action is 240 pages. A copy of the Final Office Action is attached hereto as Attachment 1. Pages 6-8 of the Final Office Action, at pages 7-9 of Attachment 1, summarize the bases for rejection. In accordance with MPEP §2271.01, the Office Action constitutes a consensus of a panel of three highly experienced and knowledgeable PTO examiner-conferees. They are identified at page 240 of the Office Action, at page 241 of Attachment 1.

Plaintiff, David Grober, has two months from the date of the Final Office Action to respond, such as by appealing. See page 238 of the Office Action at page 239 of Attachment 1.

Plaintiff, David Grober, declined to join this Status Report. To Defendants' knowledge, Plaintiff Voice International, Inc. is not represented by an attorney.

III. CONCLUSION

Absent an order instructing otherwise, in keeping with the Court's Order [Dkt. 485] dated April 15, 2020, Defendants intend to file a Joint Report every 90 days from today as to the status of the Reexamination, or within 10 days after completion of the Reexamination.

Dated: October 1, 2020

Respectfully submitted,

MARK YOUNG, P.A.

By: *s/Mark J. Young*
MARK J. YOUNG
Attorney for Defendants Oceanic Production Equipment, Ltd. and Jordan Klein Sr.

COAST LAW GROUP LLP

By: *s/David A. Peck*
David A. Peck
Attorney for Defendants Oceanic Production Equipment, Ltd. and Jordan Klein Sr.

FOX ROTHSCHILD LLP

By: *s/James E. Doroshow*
James E. Doroshow (SBN 112,920)
Attorney for Defendants Oppenheimer Cine Rental, LLC, Oppenheimer Camera Products, Inc., and Marty Oppenheimer

Attachment 1

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/014,342	07/23/2019	6611662	JK1901	8164

7590 09/28/2020

DAVID E. GROBER
578 WASHINGTON BLVD
#866
MARINA DEL REY,, CA 90292

EXAMINER	
RALIS, STEPHEN J	

ART UNIT	PAPER NUMBER
3992	

MAIL DATE	DELIVERY MODE
09/28/2020	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

DO NOT USE IN PALM PRINTER

(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

MARK YOUNG P.A (GENERAL)
1638 CAMDEN AVE.
JACKSONVILLE, FL 32207

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. *90/014,342* .

PATENT UNDER REEXAMINATION *6611662* .

ART UNIT *3992* .

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

DETAILED ACTION

Contents

I. Notice of Pre-AIA or AIA Status 4
II. Pertinent Prosecution History 4
III. Priority 5
IV. Rejection Summary 6
V. Claim Interpretation 8
A. Interpretation of Expired Claims 8
B. Interpretation of Some Claim Terms 9
(1) *Payload Platform* 9
(2) *Fixed to* 9
(3) *Fixed with respect to* 9
(4) Means for moving 10
(5) Sensor means for sensing 10
C. Lexicographic Definitions 10
D. 35 U.S.C. § 112 6th Paragraph 11
(1) Functional Phrase – "Means for Moving" 13
(2) Functional Phrase – "Sensor Means for Sensing" 17
(3) Functional Phrase – "Control System I" 20
(4) Functional Phrase – "Control System II" 23
(5) Functional Phrase – "Control System III" 26
E. 'Sources' for Ordinary and Customary Meaning 29
(1) Package: 29
VI. Claim Rejections 30
A. Issue 1 (Based on SNQ 1 – West) 31
(1) Claim(s) 1, 3, 4, 14, 31, 32, 35 and 38 are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by *West*. 31
B. Issue 2 (Based on SNQ 1 – West, Wessling and Hartmann) 63
(1) Claim(s) 1, 3, 4, 14, 31, 32, 35 and 38 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over *West* in view of *Wessling* and *Hartmann*. 63
C. Issue 3 (Based on SNQ 2 – Tijsma) 69

(1) Claim(s) 1, 3, 4, 14, 31, 32 and 35 are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by *Tijsma*. 69

(2) Claim 38 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over *Tijsma* in view of *West, Wessling* and *Hartmann*. 89

D. Issue 4 (Based on SNQ 3 – Bos) 91

(1) Claim(s) 1, 3, 4, 14, 31, 32 and 35 are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by *Bos*. 91

(2) Claim 38 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over *Bos* in view of *West, Wessling* and *Hartmann*. 112

E. Issue 5 (Based on SNQ 4 – Vaassen) 114

(1) Claim(s) 1, 3, 4, 14, 31, 32 and 35 are rejected under pre-AIA 35 U.S.C. 102(a) and (e) as anticipated by *Vaassen*. 114

(2) Claim 38 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over *Vaassen* in view of *West, Wessling* and *Hartmann*. 133

VII. Response to Arguments 135

A. Claim Rejections Under 35 USC §§ 102 and 103 135

(1) Ground 1: West 135

(2) Ground 2: West, Wessling and Hartmann 170

(3) Ground 3: Tijsma 174

(4) Ground 4: Bos 197

(5) Ground 5: Vaassen 222

VIII. Conclusion 238

I. Notice of Pre-AIA or AIA Status

The present reexamination is being conducted under the pre-AIA first to invent provisions.

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

II. Pertinent Prosecution History

On 23 July 2019, a third party requester ("EP Requester") filed an *ex parte* reexamination request ("EP Request") in the reexamination control number 90/014,342 proceedings (" '14342 Proceedings") for claims 1, 3, 4, 14, 31, 32, 35 and 38 of United States Patent Number 6,611,662 ("'662 Patent"). In the '662 patent, claims 1, 32, 35 and 38 are independent apparatus claim; claims 3 and 4 are dependent on claim 1; and claims 14 and 31 are independent method claims.

On 10 September 2019, the Office mailed an Order granting the *ex parte* reexamination of the '662 Patent ("2019 Order") in the '14342 Proceedings. In particular, the Office ordered reexamination of claims 1, 3, 4, 14, 31, 32, 35 and 38 of the '662 Patent ("Reexamined Claims).

On 16 December 2019, the Office mailed a Non-Final Office action ("Dec 2019 Non-Final Office Action") rejecting the Reexamined Claims.

On 12 February 2020, Owner filed a Request for extension of time (*i.e.*, two (2) months) to file a response in *ex parte* reexamination under 37 C.F.R. 1.550(c) ("Feb 2020 EoT Petition Request").

On 13 February 2019, the Office mailed a Petition Decision with respect to the Feb 2020 EoT Petition Request granting an extension of one (1) additional month to file a response in *ex parte* reexamination.

On 16 March 2020, Owner filed a "Response... in Ex Parte Re-Examination" ("Mar I 2020 PO Response"). The Mar I 2020 PO Response contained arguments with respect to the Reexamined Claims.[1] [2]

III. Priority

The Examiner finds that a control system is disclosed in the '756 Prov Application, however, the control system is insufficiently disclosed with respect to select functionality of the control system recited in the structural apparatus claims. Specifically, while the Examiner finds the '756 Prov Application has sufficient support for a control system being connected to the drive mechanism assembly for providing autonomous and self-correcting stabilization of multiple axis platform system, the Examiner finds that the '756 Prov Application has insufficient support for the control system "allow[ing] a user to set an initial payload platform position" (claim 32) and the control system "respond[ing] to information from the first sensor package more often than the control system responds to information from the second sensor package" (claim 38). In addition, the Examiner finds that the '756 Prov Application has insufficient

[1] The Examiner finds that Owner provided two (2) responses on 16 March 2020: (1) being 106 pages; and (2) being 112 pages. The Examiner is utilizing the 112 page submission on 16 March 2020 as the complete Mar I 2020 PO Response.
[2] The Examiner finds that Owner provided a second submission to the Office on 27 March 2020 ("Mar II 2020 PO Response"). However, the Examiner finds that there was no certificate of service provide to the third party as required by 37 C.F.R. § 1.550(f) and § 1.248. Thus, the Mar II 2020 PO Response is not considered by the Office.

disclosure to any methods, only to a broad statement to functionality of the invention and how that functionality is outside the scope of the present description.

To support the Examiner's position, the Examiner finds the '756 Prov Application states,

> Electronic control box **20** would normally ***be attached to protective housing* 18**.

('756 Prov Application at 7). In addition, the '756 Prov Application states,

> ***The servo control system, through it's sensors and electronic signal processor and motor controller, automatically maintains stabilization of the three axis. How these functions are accomplished is beyond the scope of the present description***. However, the strategic placement of sensor package A and sensor package B, and their relationship to each other for the purpose of making the invention autonomous and self correcting is claimed as part of the invention.

(*Id.* at 8; emphasis added).

Thus, the Examiner concludes that the limitations of claims 1, 3, 4 and 35 are sufficiently described in the '756 Prov Application and, thus, are entitled to the priority date of the '756 Prov Application (*i.e.*, 28 May 1999). However, the Examiner further concludes that the limitations of claims 14, 31, 32 and 38 are insufficiently described in the '756 Prov Application and, thus, are not entitled to the priority date of the '756 Prov Application and have a priority date of the '723 Application (*i.e.*, 26 May 2000).

IV. Rejection Summary

Issue 1: Claim(s) 1, 3, 4, 14, 31, 32, 35 and 38 are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by ***West, M.E.***, "*Real time Recursive Filter for Attitude Determination of the Spacelab Instrument Pointing Subsystem*," NASA Technical Memorandum 10353, p.206, National

Aeronautics and Space Administration, George C. Marshall Space Flight Center, 1992 ("***West***")

Issue 2: Claim(s) 1, 3, 4, 14, 31, 32, 35 and 38 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over ***West*** in view of ***Wessling et al.***, "*ASTRO-2 Spacelab Instrument Pointing System Mission Performance*," AIA 1995 Space Programs and Technologies Conference, p.12, National Aeronautics and Space Administration, George C. Marshall Space Flight Center, 26-28 September1995 ("***Wessling***") and ***Hartmann et al.***, "*The Instrument Pointing System – Precision Attitude Control in Space*," Space Vehicle Flight Mechanics, AGARD Conference Proceedings No. 489, p.17, France, June 1990 ("***Hartmann***")

Issue 3-(1): Claim(s) 1, 3, 4, 14, 31, 32 and 35 are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by ***Tijsma et al.*** (U.S. Patent No. 3,986,092) ("***Tijsma*** ")

Issue 3-(2): Claim 38 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over ***Tijsma*** in view of ***West, Wessling*** and ***Hartmann***

Issue 4-(1): Claim(s) 1, 3, 4, 14, 31, 32 and 35 are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by ***Bos***. (U.S. Patent No. 3,936,716)

Issue 4-(2): Claim 38 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over ***Bos*** in view of ***West, Wessling*** and ***Hartmann***

Issue 5-(1): Claim(s) 1, 3, 4, 14, 31, 32 and 35 are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by ***Vaassen et al.*** (U.S. Patent No. 3,986,092) ("***Vaassen*** ")

Issue 5-(2): Claim 38 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over ***Vaassen*** in view of ***West, Wessling*** and ***Hartmann***

V. Claim Interpretation

A. Interpretation of Expired Claims

The Examiner finds that the '662 Patent expired on 26 May 2020.

With respect to the interpretation of claim terms of expired patents, MPEP 2258(G) states,

> G. Claim Interpretation and Treatment Original patent claims will be examined only on the basis of prior art patents or printed publications applied under the appropriate parts of 35 U.S.C. 102 and 103. See MPEP § 2217. During reexamination, claims are given the broadest reasonable interpretation consistent with the specification and limitations in the specification are not read into the claims *(In re Yamamoto*, 740 F.2d 1569, 222 USPQ 934 (Fed. Cir. 1984)). In a reexamination proceeding involving claims of an expired patent, claim construction pursuant to the principle set forth by the court in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005) (words of a claim "are generally given their ordinary and customary meaning" as understood by a person of ordinary skill in the art in question at the time of the invention) should be applied since the expired claims are not subject to amendment. The statutory presumption of validity, 35 U.S.C. 282, has no application in reexamination (*In re Etter*, 756 F.2d 852, 225 USPQ 1 (Fed. Cir. 1985)).

(MPEP 2258(G); emphasis in original).

Accordingly, the claims herein will be interpreted in accordance with the decision in *Phillips*. The Courts have construed multiple terms of the '662 Patents. Although not binding on the Office, the Courts interpret claim terms more narrowly and, as such, provide guidance as to what would be their "ordinary and customary meaning as understood by a person of ordinary skill in the art in question at the time of the invention." A discussion of the various Court's

constructions are presented below to show, ultimately, that the art applied to reject the claims teaches the claim features within the meaning of the '662 Patent, at least as suggested by the Courts, and therefore applied narrowly.

B. Interpretation of Some Claim Terms

The Court's interpretation under the *Phillips* standard is arguably narrower than the "broadest reasonable interpretation" (or "BRI") standard.

Based upon a review of various Court's claim constructions, the Examiner notes the following:

(1) *Payload Platform*

The Federal Circuit court construed "payload platform" to mean,

> "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to."

(*Grober v. Mako Products, Inc.*, 686 F.3d 1335 (2012)) (("*Grober v Mako*") at 6-11).

(2) *Fixed to*

A federal district court construed "fixed to" to mean,

> "securely fastened to and stationary relative to."

(*Voice International, Inc. et al v. Oppenheimer Cine Rentals, LLC et al.*" No. 2:15cv8830, Dkt. 252 (C.D. Cal. June 20, 2018) ("*Voice v OCR I*") at 11-13).

(3) *Fixed with respect to*

A federal district court construed "fixed with respect to" to mean,

> "in a continuous unchanging relationship with."

(*Voice v OCR I* at 13-22).

(4) Means for moving

A federal district court construed "means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions " to mean,

> "a first drive mechanism and a second drive mechanism, where the first drive mechanism is fixed to the base and includes at least a motor and a first drive shaft, with the first drive shaft connected to a "bottom platform" (a structure located between the payload platform and the base), and where the second drive mechanism includes at least a motor and a second drive shaft, with the second drive mechanism is fixed to the bottom platform and mounted orthogonally to the first drive mechanism, and the payload platform is located on the second drive shaft of the second drive mechanism."

(*Voice International, Inc. et al v. Oppenheimer Cine Rentals, LLC et al.*" No. 2:15cv8830, Dkt. 458 (C.D. Cal. Feb. 04, 2020) ("*Voice v OCR II*") at 4-20).

(5) Sensor means for sensing

A federal district court construed "sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position" to mean,

> "one or more level sensors of the second sensor package ."

(*Voice v OCR II* at 19-23).

C. Lexicographic Definitions

A first exception to the prohibition of reading limitations from the specification into the claims is when the Owner for patent has provided a lexicographic definition for the term. See

MPEP § 2111.01(IV). After careful review of the original specification, the prosecution history, and unless expressly noted otherwise by the Examiner, the Examiner finds that he is unable to locate any lexicographic definitions (either express or implied) with reasonable clarity, deliberateness, and precision. Because the Examiner is unable to locate any lexicographic definitions with reasonable clarity, deliberateness, and precision, the Examiner concludes that Owner is not his/her own lexicographer. See MPEP §2111.01 IV.

***D.* 35 U.S.C. § 112 6th Paragraph**

A second exception to giving words in the claims their ordinary and customary meaning is when a claimed phrase is interpreted in accordance with 35 U.S.C. § 112 6th paragraph. See MPEP § 2181 *et seq*.

The following is a quotation of 35 U.S.C. 112(f):

> (f) Element in Claim for a Combination. – An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The following is a quotation of pre-AIA 35 U.S.C. 112, sixth paragraph:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The claims in this application are given their broadest reasonable interpretation using the plain meaning of the claim language in light of the specification as it would be understood by one of ordinary skill in the art. The broadest reasonable interpretation of a claim element (also commonly referred to as a claim limitation) is limited by the description in the specification when 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is invoked.

As explained in MPEP § 2181, subsection I, claim limitations that meet the following three-prong test will be interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph:

(A) the claim limitation uses the term "means" or "step" or a term used as a substitute for "means" that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function;
(B) the term "means" or "step" or the generic placeholder is modified by functional language, typically, but not always linked by the transition word "for" (e.g., "means for") or another linking word or phrase, such as "configured to" or "so that"; and
(C) the term "means" or "step" or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

Use of the word "means" (or "step") in a claim with functional language creates a rebuttable presumption that the claim limitation is to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites sufficient structure, material, or acts to entirely perform the recited function.

Absence of the word "means" (or "step") in a claim creates a rebuttable presumption that the claim limitation is not to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is not interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites function without reciting sufficient structure, material or acts to entirely perform the recited function.

Claim limitations in the '662 Patent that use the word "means" (or "step") are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action.

In addition, the '662 Patent includes one or more claim limitations that do not use the word "means," but are nonetheless being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, because the claim limitation(s) uses a generic placeholder that is coupled with functional language without reciting sufficient structure to perform the recited function and the generic placeholder is not preceded by a structural modifier. Such claim limitation(s) is/are: "control system" in claims 1, 32, 35 and 38.

Because this/these claim limitation(s) is/are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, it/they is/are being interpreted to cover the corresponding structure described in the specification as performing the claimed function, and equivalents thereof.

If Owner does not intend to have this/these limitation(s) interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, Owner may: (1) amend the claim limitation(s) to avoid it/them being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph (e.g., by reciting sufficient structure to perform the claimed function); or (2) present a sufficient showing that the claim limitation(s) recite(s) sufficient structure to perform the claimed function so as to avoid it/them being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph.

(1) Functional Phrase – "Means for Moving"

The Examiner finds that claims 1, 32, 35 and 38 expressly recite:

> *means for* moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions [emphasis added].

"Functional Phrase 1" or "FP1" – From claims 1, 32, 35 and 38, '662 patent.

To invoke 35 U.S.C. § 112 6th paragraph, a claimed phrase must meet the three (3) prong analysis as set forth in MPEP § 2181 I.

i. 3-Prong Analysis: Prong (A)

In accordance with Prong (A), the MPEP states:

> (A) the claim limitation uses the term "means" or "step" or a term used as a substitute for "means" that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function ....

MPEP § 2181 I. — Prong (A).

Because FP1 expressly recites a "means for," the Examiner concludes that FP1 meets Invocation Prong (A).

ii. 3-Prong Analysis: Prong (B)

In accordance with the MPEP, Prong (B) requires:

> (B) the term "means" or "step" or the generic placeholder is modified by functional language, typically, but not always linked by the transition word "for" (e.g., "means for") or another linking word or phrase, such as "configured to" or "so that" ....

MPEP § 2181 I. — Prong (B).

Based upon a review of FP1, the Examiner finds that claimed function is:

> [M]oving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions.

- "Function of Functional Phrase 1" or "FFP1."

Because FP1 recites the above recited function, the Examiner concludes that FP1 meets Invocation Prong (B).

iii. 3-Prong Analysis: Prong (C)

In accordance with the MPEP, Prong (C) requires:

> (C) the term "means" or "step" or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

MPEP § 2181 I. — Prong (C).

Based upon a review of the entire FP1, the Examiner concludes that FP1 does not contain sufficient structure for performing the entire claimed function of FP1.[3] In fact, the Examiner finds that the Functional Phrase 1 recites very little structure (if any) for performing the claimed function.

Because the Functional Phrase 1 does contain insufficient structure for performing the entire claimed functions, the Examiner concludes that the FP1 meets Invocation Prong (C).

In conclusion, because FP1 meets the three prong analysis set forth in MPEP §2181 I., the Examiner concludes that Functional Phrase 1 invokes 35 U.S.C. §112, 6th paragraph.

iv. Corresponding structure for Functional Phrase #1

Once a claimed phrase invokes 35 U.S.C. § 112 6th paragraph, the next step is to determine the corresponding structure. (MPEP § 2181 II).

The Examiner has carefully reviewed the original disclosure to determine the corresponding structure for FP1. In reviewing the original disclosure, the Examiner finds that the '662 Patent discloses

> the two axis stabilized platform **100** includes *a bottom platform **2** connected to a first drive shaft **4** of a first drive mechanism **10**… The drive mechanism **10** preferably includes a motor* and depending on the application requirements for torque and resolution, a gear box. *An encoder is preferably attached to the motor*

[3] Although not necessary, the Examiners have reviewed the rest of claims 1, 32, 35 and 38 and the *entire claims* do not contain sufficient structure for performing the functions as set forth within the Functional Phrases.

and provides feedback about the position of the bottom platform 2.

('662 Patent col. 3, ll.14-24; emphasis added). The Examiner finds that the '662 Patent discloses

> *The second drive mechanism **30** is mounted orthogonally to the first drive mechanism **10**... The second drive shaft 24* may be a single or split shaft mounted on a bearing **26** which is supported by the bottom platform **2**... *The second drive mechanism **30** is preferably made up of a motor*, and depending on the application requirements for torque and resolution, an optional gear box. *An encoder of the drive mechanism 30* provides feedback about a position of the camera platform **22**.

('662 Patent col. 3, ll.42-51; emphasis added).

Thus, in light of the portions of the '662 Patent cited above, the Examiner concludes the structure for performing the FFP1 as simply two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder.

Similarly, as set forth *supra*, the Examiner finds that *Voice v OCR II* found that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.B.(4)). The Examiner further finds that *Voice v OCR II* construed Functional Phrase 1 to mean,

> "a first drive mechanism and a second drive mechanism, where the first drive mechanism is fixed to the base and includes at least a motor and a first drive shaft, with the first drive shaft connected to a "bottom platform" (a structure located between the payload platform and the base), and where the second drive mechanism includes at least a motor and a second drive shaft, with the second drive mechanism is fixed to the bottom platform and mounted orthogonally to the first drive mechanism, and the payload platform is located on the second drive shaft of the second drive mechanism."

(See V.B.(4)). However, while the Examiner acknowledges the *Voice v OCR II* construction, the Examiner finds that *Voice v OCR II* has provided "structural limitation(s) from the written description that are unnecessary to perform the claimed function. *Welker Bearing*, 550 F.3d at 1097, 89 USPQ2d at 1294; *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1233, 57 USPQ2d 1679, 1685 (Fed. Cir. 2001)." (See MPEP § 2181.III). The Examiner finds that

Functional Phrase 1 only requires the structure of "two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder" to perform the claimed function. (See § V.D.(1) *supra*; and see *Dec 2019 Non-Final Office Action* at § VI.C.(1).[4] Thus, the claims will be examined as such.

(2) Functional Phrase – "Sensor Means for Sensing"

The Examiner finds that claims 1, 32, 35 and 38 expressly recite:

> *sensor means for* sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position [emphasis added].

"Functional Phrase 2" or "FP2" – From claims 1, 32, 35 and 38, '662 patent.

To invoke 35 U.S.C. § 112 6th paragraph, a claimed phrase must meet the three (3) prong analysis as set forth in MPEP § 2181 I.

i. 3-Prong Analysis: <u>Prong (A)</u>

Because FP2 expressly recites a "means for," the Examiner concludes that FP2 meets Invocation Prong (A).

ii. 3-Prong Analysis: <u>Prong (B)</u>

[4] The Examiner finds that Owner does not challenge and agrees with the construction of Functional Phrase 1. (See Mar I 2020 PO Response at 2). The Examiner will hereby rely on Owner's statements regarding agreement with the structural construction the Functional Phrase 1 to advance prosecution of this patent reexamination. See 37 C.F.R. §1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability . . . . [Emphasis added.]"

Based upon a review of FP2, the Examiner finds that claimed function is:

[S]ensing a position of the payload platform and

[P]roviding information based on the position of the payload platform relative to a predetermined position.

- "Function of Functional Phrase 2" or "FFP2."

Because FP2 recites the above recited function, the Examiner concludes that FP2 meets Invocation Prong (B).

iii. 3-Prong Analysis: Prong (C)

Based upon a review of the entire FP2, the Examiner concludes that FP2 does not contain sufficient structure for performing the entire claimed function of FP2.[5] In fact, the Examiner finds that the Functional Phrase 2 recites very little structure (if any) for performing the claimed function.

Because the Functional Phrase 2 does contain insufficient structure for performing the entire claimed functions, the Examiner concludes that the FP2 meets Invocation Prong (C).

In conclusion, because FP2 meets the three prong analysis set forth in MPEP §2181 I., the Examiner concludes that Functional Phrase 2 invokes 35 U.S.C. §112, 6th paragraph.

iv. Corresponding structure for Functional Phrase #2

The Examiner has again carefully reviewed the original disclosure to determine the corresponding structure for FP2. In reviewing the original disclosure, the Examiner finds that the

[5] Although not necessary, the Examiners have reviewed the rest of claims 1, 32, 35 and 38 and the *entire claims* do not contain sufficient structure for performing the functions as set forth within the Functional Phrases.

'662 Patent discloses

> *The sensor package B includes one or more motion sensors* which provide position feedback to the control system. *Preferably, the sensors* in sensor package B *are level sensors*.

('662 Patent col. 4, ll.40-43; emphasis added).

Thus, in light of the portions of the '662 Patent cited above, the Examiner concludes the structure for performing the FFP2 as simply one or more motion or level sensors.

Similarly, as set forth *supra*, the Examiner finds that *Voice v OCR II* found that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.B.(5)). The Examiner further finds that *Voice v OCR II* construed Functional Phrase 2 to mean,

> "one or more level sensors of the second sensor package."

(*Id.*). However, while the Examiner acknowledges the *Voice v OCR II* limited construction, the Examiner finds that "[a] reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments." *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). The Examiner finds that the '662 Patent discloses the second sensor package *including one or more motion sensors* to provide position feedback, *with a preference to level sensors*. ('662 Patent col. 4, ll.40-43). The Examiner finds that dependent claim 3 further limits the second sensor package to include "two level sensors for sensing a position of the payload platform in two perpendicular direction." (*Id* at claim 3). The Examiner finds these two level sensors as being additional to the Functional Phrase 2 structure of the second sensor package. Since, the sensor package of claim 3 would include the two level sensors as well as the Functional Phrase 2 structure of claim 1, the Examiner finds that Functional Phrase 2 of claim 1 is broader than dependent claim 3. Consequently, the Examiner finds that Functional Phrase 2

requires the structure of either "one or more motion or level sensors" to perform the claimed function. (See § V.D.(2) *supra*; and see *Dec 2019 Non-Final Office Action* at § VI.C.(2).[6] Thus, the claims will be examined as such.

(3) Functional Phrase – "Control System I"

The Examiner finds that claims 1 and 35 expressly recite:

> *control system* connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package [emphasis added].

"Functional Phrase 3" or "FP3" – From claims 1, 32, 35 and 38, '662 patent.

To invoke 35 U.S.C. § 112 6th paragraph, a claimed phrase must meet the three (3) prong analysis as set forth in MPEP § 2181 I.

i. 3-Prong Analysis: <u>Prong (A)</u>

FP3 meets invocation prong (A) because "means ... for" type language is recited. The Examiner first finds that "control system" is a generic placeholder or nonce term equivalent to "means" because the term "control system" does not convey any particular structure. The Examiner further notes that the specification of the '662 Patent does not define or otherwise use the term "control system" and thus the specification of the '662 Patent does not impart or disclose any structure for the phrase.

[6] The Examiner finds that Owner does not challenge and agrees with the construction of Functional Phrase 2. (See Mar I 2020 PO Response at 2). The Examiner will hereby rely on Owner's statements regarding agreement with the structural construction the Functional Phrase 2 to advance prosecution of this patent reexamination. See 37 C.F.R. §1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability . . . . [Emphasis added.]"

Additionally, the Examiner has reviewed the prosecution history and the relevant prior art of record herein and find that "control system" as used in the claims does not provide an art-recognized structure to perform the claimed function. Rather more than a simple control system would be required to perform the function recited in FP3.

Accordingly, the Examiner finds nothing in the specification, prosecution history or the prior art to construe "control system…" in FP3 as the name of a sufficiently definite structure for performing the functions recited in FP3 so as to take the overall claim limitation out of the ambit of §112(6th ¶). *See Williamson v. Citrix Online, L.L.C.,* 115 USPQ2d 1105, 1112 (Fed. Cir. 2015).

In light of the above, the Examiner concludes that the term "control system…" is a generic placeholder having no specific structure associated therewith. Because "control system …" is merely a generic placeholder having no specific structure associated therewith, the Examiner concludes that FP3 meets invocation Prong (A).

ii. 3-Prong Analysis: <u>Prong (B)</u>

Based upon a review of FP3, the Examiner finds that claimed function is:

> *[S]tabilizing* the platform in response to information provided by the first sensor package and the second sensor package

- "Function of Functional Phrase 3" or "FFP3."

Because FP3 recites the above recited function, the Examiner concludes that FP3 meets Invocation Prong (B).

iii. 3-Prong Analysis: <u>Prong (C)</u>

Based upon a review of the entire FP3, the Examiner concludes that FP3 does not contain sufficient structure for performing the entire claimed function of FP3.[7] In fact, the Examiner finds that the Functional Phrase 3 recites very little structure (if any) for performing the claimed function.

Because the Functional Phrase 3 does contain insufficient structure for performing the entire claimed functions, the Examiner concludes that the FP3 meets Invocation Prong (C).

In conclusion, because FP3 meets the three prong analysis set forth in MPEP §2181 I., the Examiner concludes that Functional Phrase 3 invokes 35 U.S.C. §112, 6th paragraph.

iv. Corresponding structure for Functional Phrase #3

Once a claimed phrase invokes 35 U.S.C. § 112 6th paragraph, the next step is to determine the corresponding structure. (MPEP § 2181 II).

The Examiner has again carefully reviewed the original disclosure to determine the corresponding structure for FP3. In reviewing the original disclosure, the Examiner finds that the '662 Patent discloses

> *A control system for stabilizing the platform is mounted within the control box* ***20*** *either on one of the protective housings* ***16, 18****, on the mounting base* ***60****, or at another position on the stabilized platform* ***100***. The control system uses information gathered from a first sensor package A and a second sensor package B for stabilizing and self correcting the camera platform 22 as will be described below. *The control system is preferably a digital system but may also be an analog system*.

('662 Patent col. 4, ll.16-24; emphasis added).

Thus, in light of the portions of the '662 Patent cited above, the Examiner concludes the

[7] Although not necessary, the Examiners have reviewed the rest of claims 1 and 35 and the *entire claims* do not contain sufficient structure for performing the functions as set forth within the Functional Phrases.

structure for performing the FFP3 as simply a digital or analog generic control system.

(4) Functional Phrase – "Control System II"

The Examiner finds that claim 32 expressly recites:

> *control system* connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package... wherein the *control system* allows a user to set an initial payload platform position and provides self correction of the platform to the initial position [emphasis added].

"Functional Phrase 4" or "FP4" – From claim 32, '662 patent.

To invoke 35 U.S.C. § 112 6th paragraph, a claimed phrase must meet the three (3) prong analysis as set forth in MPEP § 2181 I.

i. 3-Prong Analysis: <u>Prong (A)</u>

FP4 meets invocation prong (A) because "means ... for" type language is recited. The Examiner first finds that "control system" is a generic placeholder or nonce term equivalent to "means" because the term "control system" does not convey any particular structure. The Examiner further notes that the specification of the '662 Patent does not define or otherwise use the term "control system" and thus the specification of the '662 Patent does not impart or disclose any structure for the phrase.

Additionally, the Examiner has reviewed the prosecution history and the relevant prior art of record herein and find that "control system" as used in the claims does not provide an art-recognized structure to perform the claimed function. Rather more than a simple control system would be required to perform the function recited in FP4.

Accordingly, the Examiner finds nothing in the specification, prosecution history or the prior art to construe "control system…" in FP4 as the name of a sufficiently definite structure for performing the functions recited in FP4 so as to take the overall claim limitation out of the ambit of §112(6th ¶). *See Williamson v. Citrix Online, L.L.C.,* 115 USPQ2d 1105, 1112 (Fed. Cir. 2015).

In light of the above, the Examiner concludes that the term "control system…" is a generic placeholder having no specific structure associated therewith. Because "control system …" is merely a generic placeholder having no specific structure associated therewith, the Examiner concludes that FP4 meets invocation Prong (A).

ii. 3-Prong Analysis: <u>Prong (B)</u>

Based upon a review of FP4, the Examiner finds that claimed function is:

> *[S]tabilizing* the platform in response to information provided by the first sensor package and the second sensor package; And
>
> *[A]llow[ing]* a user to set an initial payload platform position and provides self correction of the platform to the initial position

- "Function of Functional Phrase 4" or "FFP4."

Because FP4 recites the above recited function, the Examiner concludes that FP4 meets Invocation Prong (B).

iii. 3-Prong Analysis: <u>Prong (C)</u>

Based upon a review of the entire FP4, the Examiner concludes that FP4 does not contain sufficient structure for performing the entire claimed function of FP4.[8] In fact, the Examiner finds that the Functional Phrase 4 recites very little structure (if any) for performing the claimed function.

Because the Functional Phrase 4 does contain insufficient structure for performing the entire claimed functions, the Examiner concludes that the FP4 meets Invocation Prong (C).

In conclusion, because FP4 meets the three prong analysis set forth in MPEP §2181 I., the Examiner concludes that Functional Phrase 4 invokes 35 U.S.C. §112, 6th paragraph.

iv. Corresponding structure for Functional Phrase #4

Once a claimed phrase invokes 35 U.S.C. § 112 6th paragraph, the next step is to determine the corresponding structure. (MPEP § 2181 II).

The Examiner has again carefully reviewed the original disclosure to determine the corresponding structure for FP4. In reviewing the original disclosure, the Examiner finds that the '662 Patent discloses

> *A control system for stabilizing the platform is mounted within the control box* ***20*** *either on one of the protective housings* ***16, 18****, on the mounting base* ***60****, or at another position on the stabilized platform* ***100***. The control system uses information gathered from a first sensor package A and a second sensor package B for stabilizing and self correcting the camera platform 22 as will be described below. *The control system is preferably a digital system but may also be an analog system*.

('662 Patent col. 4, ll.16-24; emphasis added).

Thus, in light of the portions of the '662 Patent cited above, the Examiner concludes the

[8] Although not necessary, the Examiners have reviewed the rest of claim 32 and the *entire claim* does not contain sufficient structure for performing the functions as set forth within the Functional Phrases.

structure for performing the FFP4 as simply a digital or analog generic control system.

(5) Functional Phrase – "Control System III"

The Examiner finds that claim 38 expressly recite:

> *control system* connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package… wherein the *control system* responds to information from the first sensor package more often than the control system responds to information from the second sensor package [emphasis added].

"Functional Phrase 5" or "FP5" – From claim 38, '662 patent.

To invoke 35 U.S.C. § 112 6th paragraph, a claimed phrase must meet the three (3) prong analysis as set forth in MPEP § 2181 I.

i. 3-Prong Analysis: <u>Prong (A)</u>

FP5 meets invocation prong (A) because "means ... for" type language is recited. The Examiner first finds that "control system" is a generic placeholder or nonce term equivalent to "means" because the term "control system" does not convey any particular structure. The Examiner further notes that the specification of the '662 Patent does not define or otherwise use the term "control system" and thus the specification of the '662 Patent does not impart or disclose any structure for the phrase.

Additionally, the Examiner has reviewed the prosecution history and the relevant prior art of record herein and find that "control system" as used in the claims does not provide an art-recognized structure to perform the claimed function. Rather more than a simple control system would be required to perform the function recited in FP5.

Accordingly, the Examiner finds nothing in the specification, prosecution history or the prior art to construe "control system…" in FP5 as the name of a sufficiently definite structure for performing the functions recited in FP5 so as to take the overall claim limitation out of the ambit of §112(6th ¶). *See Williamson v. Citrix Online, L.L.C.,* 115 USPQ2d 1105, 1112 (Fed. Cir. 2015).

In light of the above, the Examiner concludes that the term "control system…" is a generic placeholder having no specific structure associated therewith. Because "control system …" is merely a generic placeholder having no specific structure associated therewith, the Examiner concludes that FP5 meets invocation Prong (A).

ii. 3-Prong Analysis: <u>Prong (B)</u>

Based upon a review of FP5, the Examiner finds that claimed function is:

> *[S]tabilizing* the platform in response to information provided by the first sensor package and the second sensor package …

- "Function of Functional Phrase 5" or "FFP5."

Because FP5 recites the above recited function, the Examiner concludes that FP5 meets Invocation Prong (B).

iii. 3-Prong Analysis: <u>Prong (C)</u>

Based upon a review of the entire FP5, the Examiner concludes that FP5 does not contain sufficient structure for performing the entire claimed function of FP5.[9] In fact, the Examiner finds that the Functional Phrase 5 recites very little structure (if any) for performing the claimed function.

Because the Functional Phrase 5 does contain insufficient structure for performing the entire claimed functions, the Examiner concludes that the FP5 meets Invocation Prong (C).

In conclusion, because FP5 meets the three prong analysis set forth in MPEP §2181 I., the Examiner concludes that Functional Phrase 5 invokes 35 U.S.C. §112, 6th paragraph.

iv. Corresponding structure for Functional Phrase #5

Once a claimed phrase invokes 35 U.S.C. § 112 6th paragraph, the next step is to determine the corresponding structure. (MPEP § 2181 II).

The Examiner has again carefully reviewed the original disclosure to determine the corresponding structure for FP5. In reviewing the original disclosure, the Examiner finds that the '662 Patent discloses

> *A control system for stabilizing the platform is mounted within the control box* ***20*** *either on one of the protective housings* ***16, 18****, on the mounting base* ***60****, or at another position on the stabilized platform* ***100***. The control system uses information gathered from a first sensor package A and a second sensor package B for stabilizing and self correcting the camera platform 22 as will be described below. *The control system is preferably a digital system but may also be an analog system*.

('662 Patent col. 4, ll.16-24; emphasis added).

Thus, in light of the portions of the '662 Patent cited above, the Examiner concludes the

[9] Although not necessary, the Examiners have reviewed the rest of claim 38 and the *entire claim* does not contain sufficient structure for performing the functions as set forth within the Functional Phrases.

structure for performing the FFP5 as simply a digital or analog generic control system.

***E.* 'Sources' for Ordinary and Customary Meaning**

The Examiner hereby adopts the following interpretations under the customary ordinary meaning standard. In other words, the Examiner has provided the following interpretations simply as express notice of how he is interpreting particular terms under the customary ordinary meaning standard. Additionally, these interpretations are only a guide to claim terminology since claim terms must be interpreted in context of the surrounding claim language. In accordance with *In re Morris*, 127 F.3d 1048, 1056, 44 USPQ2d 1023, 1029 (Fed. Cir. 1997), the Examiner points to these other "sources" to support his interpretation of the claims. Finally, the following list is not intended to be exhaustive in any way:

(1) Package:

The Examiner finds that at least claims 1, 3, 4, 14, 31, 32, 35 and 38 recite several different variations of "package" (*e.g.*, first sensor package and second sensor package). The Examiner finds that one of ordinary skill in the art would recognize a "package" as a group of elements combined together with the term 'first/second sensor' labeling what type of package the combination is. To support the Examiner's position, the Examiner finds that *West, M.E.*, "*Real time Recursive Filter for Attitude Determination of the Spacelab Instrument Pointing Subsystem*," NASA Technical Memorandum 10353, p.206, National Aeronautics and Space Administration, George C. Marshall Space Flight Center, 1992 ("***West***") discloses,

> Mounted on the IPS lower support framework is an accelerometer package (ACP) [8] consisting of three analog force pendulums in an orthogonal configuration. The ACP outputs are filtered by a high-pass analog filter to remove alternating current (ac) coupling, and a low-pass filter to reduce aliasing due to sampling. The output of the low-pass filter is sampled and held at a 50-Hz frequency before being acquired by the control unit. The controller utilizes the ACP measurements in a feed forward path to assist in suppressing the shuttle vibration environment.
>
> A three-axis strap-down inertial reference unit, manufactured by Ferranti, is mounted on the underside of the equipment platform above the RDU. The gyro package (GP) [9] uses four single-DOF pulse-balanced rate integrating gyroscopes in the rate mode.

(*West* at § B, ¶¶ 2-3; emphasis added).

Thus, in light of the particular structures known to one of ordinary skill in the art and discussed *supra*, the Examiner construes the "first sensor package" and "second sensor package" as simply first and second groups of sensor elements. [10]

VI. Claim Rejections

Claim Rejections – 35 USC § 102

The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections – 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

[10] The Examiner finds that Owner does not challenge and agrees with the construction of package. (See Mar I 2020 PO Response at 3). The Examiner will hereby rely on Owner's statements regarding agreement with the structural construction of package to advance prosecution of this patent reexamination. See 37 C.F.R. §1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability . . . . [Emphasis added.]"

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under pre-AIA 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

A. Issue 1 (Based on SNQ 1 – West)

(1) Claim(s) 1, 3, 4, 14, 31, 32, 35 and 38 are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by ***West.***

With respect to the limitations of claim 1, *West* discloses

a. [a] stabilized platform comprising:

The Examiner finds that *West* discloses a three-axis stabilized instrument pointing system (IPS) that was developed to point instruments with stability and accuracy. (*West* at §§ I, ¶¶ 1-3; see Figure 1).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *West* discloses a combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload is attached.' (*West* at §§ I, ¶ 1; II, ¶ 1; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto).

c. a base;

The Examiner finds that *West* discloses Spacelab pallet and gimbal support structure as defining a "second body" that is rigidly attached to a "first body" (*i.e.*, shuttle body). (*West* at § V.A; see Figures 1, 8). The Examiner finds that the base would constitute the combination of 'body two' including base plate **4**, pedestal **6** and support frame work **10**. (See comparison of Figures 1 and 8 of *West*).

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id.*)

In this light, the Examiner finds that *West* discloses the IPS gimbals structure assembly

[6] including three identical torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**) being orthogonally oriented to one another. (See *West* at Figures 1, 2). The Examiner finds that *West* disclose the torque drive units have two redundant frameless, brushless, DC motors that generate torque on the motor housing with respect to a DU shaft. (*West* at § II.B, ¶ 1; see Figures 1, 2). The Examiner finds that *West* discloses each DU having a single speed and multispeed resolver set. (*Id.*) The Examiner finds that a 'resolver' is a type of encoder that is known in the art for positioning measurement of the shaft of a motor.[11] The Examiner finds this motor, motor shaft and resolver configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) supra).

In this light, the Examiner finds that *West* discloses accelerometer package (ACP) [8] consisting of three analog force pendulums in an orthogonal configuration for sensing motion of the shuttle. (*West* at § II.B, ¶ 2; see Figure 1).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional

[11] See ***Gerretz et al***. (U.S. Patent No. 5,291,108) at c.4, l.67 – c.5, l.13; see Figure 1.

Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *West* discloses a three-axis strap-down inertial reference unit, gyro package (GP) [**18**], being mounted on the underside of the equipment platform **22**. (*West* at § II.B, ¶ 3; see Figure 1). The Examiner finds that the GP uses three orthogonally integrating rate mode gyroscopes with a fourth being skewed for redundancy purposes to provide orientation/motion measurement of the shuttle. (*Id*. at §§ I, ¶ 2; II.B, ¶ 3). In addition, the Examiner finds that *West* discloses an Optical Sensor Package (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the OSP **24** providing information to compensate for drift and errors accumulated during the gyro control. (*Id* at §§ I, ¶ 3; II.C, ¶ 3, 11). The Examiner finds that *West* discloses the position/orientation sensing being based on the acquisition, pointing to, and tracking of a variety of astronomical targets, thus, the sensing and providing of positional/orientational information by the GP and OSP is relative to predetermined positions. (*Id*. at §§ II, ¶ 1; A, ¶¶ 1-3).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 3 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(3) *supra*). The Examiner construes a 'control system…' as a

digital or analog generic control system. [12]

In this light, the Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8**, GP **18** and OSP **24**, respectively, and controls the stabilization of the payload. (*Id.*)

h. wherein the second sensor package is fixed to the payload platform, and

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B(1) *supra*).

In this light, the Examiner finds that *West* discloses a combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload is attached.' (*West* at §§ I, ¶ 1; II, ¶ 1; see Figure 1). The Examiner finds that *West* discloses a three-axis strap-down inertial reference unit, gyro package (GP) [**18**], being mounted on the underside of the equipment platform **22**. (*Id.* at § II.B, ¶ 3). In addition, the Examiner finds that *West* discloses the Optical Sensor Package (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms

[12] The Examiner finds that Owner does not challenge and agrees with the construction of Functional Phrase 3. (See Mar I 2020 PO Response at 2). The Examiner will hereby rely on Owner's statements regarding agreement with the structural construction the Functional Phrase 3 to advance prosecution of this patent reexamination. See 37 C.F.R. §1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability . . . . [Emphasis added.]"

the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). Since the OSP **24** is specifically mounted on the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached, the Examiner finds that the OSP **24**, therefore, is rigidly fixed to the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached.

Thus, the Examiner concludes that both the GP **18** and OSP **24** are fixed to the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination.

i. the first sensor package is fixed with respect to the base.

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) supra).

In this light, In this light, the Examiner finds that *West* discloses accelerometer package (ACP) [8] consisting of three analog force pendulums in an orthogonal configuration for sensing motion of the shuttle being mounted on the IPS lower support framework. (*West* at §§ II.B, ¶ 2; C, ¶ 7; see Figure 1).

With respect to the limitations of claim 3, *West* discloses

wherein the second sensor package includes two level sensors for sensing a position of the payload platform in two perpendicular directions.

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of

sensor elements. (See § V.E.(1) *supra*). In addition, the Examiner finds that the '662 Patent discloses the second sensor package being one or more motions sensors with the sensors preferably being level sensors. ('662 Patent at c.4, ll.40-43). In addition, the Examiner finds that the '662 Patent discloses motion sensors as rate sensors, gyroscopic sensors , fiber optic gyros or other sensors sensing motion of the base. (*Id.* at 28-30). Thus, the Examiner finds that a motion sensor tracking motion relative to a certain predetermined feature would be a level sensor.

The Examiner finds that *West* discloses the three-axis strap-down inertial reference unit, gyro package (GP) [**18**], using three orthogonally integrating rate mode gyroscopes with a fourth being skewed for redundancy purposes to provide orientation/motion measurement of the shuttle. (*Id.* at §§ I, ¶ 2; II.B, ¶ 3). The Examiner finds that *West* discloses the gyroscopes in the GP being set to "rate mode." (*Id.* at § II.B, ¶ 3). The Examiner finds that in "rate mode" a gyroscope senses the rate of rotation about a certain axis. To support the Examiner's position, the Examiner finds that as the shuttle rolls, the roll axes gyroscope would measure non-zero values until the platform/shuttle levels out, indicating a horizontal position for that roll axis. The same applies to the other gyroscopes axes since they would measure non-zero values until the platform/shuttle levels out in that particular axis. Thus, each gyroscope would inherently be a level sensor for each of the three orthogonal axes.

In addition, the Examiner finds that *West* also discloses the OSP **24** being utilized as part of the altitude determination filter (ADF). The Examiner finds that attitude is "the position of an aircraft or spacecraft determined by the relationship between its axes and a reference datum (as the horizon or a particular star)."[13] The Examiner finds that *West* discloses the OSP **24** having three (3) fixed head star trackers (FHST's) that are utilized to provide independent measurements

[13] Merriam Webster's Collegiate Dictionary, Tenth Edition. 1996 p.75.

of the observability of the roll attitude and roll drift of the IPS. The Examiner finds that these error measurements, by each FHST determining the attitude of the platform and payload relative to the feature which the OSP **24** is tracking, would be a determination of the error in the level of the feature relative to the desired location of the platform and payload. Thus, the ADF would be providing error determinations on how level the platform is based upon the feature the OSP is tracking.

With respect to the limitations of claim 4, *West* discloses

wherein the second sensor package is mounted on the payload platform

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) supra). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *West* discloses the combination of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming a three dimensional structure on which a payload is attached. (*West* at §§ I, ¶ 1; II, ¶ 1; see Figure 1). The Examiner finds that *West* discloses a three-axis strap-down inertial reference unit, gyro package (GP) [**18**], being mounted on the underside of the equipment platform **22**. (*Id.* at § II.B, ¶ 3). In addition, the Examiner finds that *West* discloses the Optical Sensor Package (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see

Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). Since the OSP **24** is specifically mounted on the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached, the Examiner finds that the OSP **24**, therefore, is mounted on the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached.

Thus, the Examiner concludes that both the GP **18** and OSP **24** are mounted on the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination.

With respect to the limitations of claim 14, *West* discloses

a. [a] method of stabilizing and self correcting a camera platform comprising:

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *West* discloses a combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming a three dimensional structure on which a payload is attached. (*West* at §§ I, ¶ 1; II, ¶ 1; see Figure 1). The Examiner finds that *West* discloses a three-axis stabilized instrument pointing system (IPS) that was developed to point instruments with stability and accuracy. (*West* at §§ I, ¶¶ 1-3; see Figure 1).

b. positioning a stabilized camera platform on a moving object;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *West* discloses a combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload is attached.' (*West* at §§ I, ¶ 1; II, ¶ 1; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the IPS gimbals structure assembly [6] including three identical torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**) being orthogonally oriented to one another. (See *West* at Figures 1, 2). The Examiner finds that *West* disclose the torque drive units have two redundant frameless, brushless, DC motors that generate torque on the motor housing with respect to a DU shaft to position the combination platform assembly. (*West* at § II.B, ¶ 1; see Figures 1, 2). The Examiner finds that *West* discloses Spacelab pallet and gimbal support structure as defining a "second body" (*i.e.*, base plate **4**, pedestal **6** and support frame work **10**) that is rigidly attached to a "first body" (*i.e.*, shuttle body) that is moving. (*West* at § V.A; see Figures 1, 8).

c. stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package sensing motion of the moving object independent of motion of the payload platform;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or

affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *West* discloses equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination being stabilized by three identical torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**) based upon data collected by accelerometer package (ACP) [8] consisting of three analog force pendulums in an orthogonal configuration for sensing motion of the shuttle. (*West* at §§ I, ¶2; II.B, ¶ 2; see Figure 1). The Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8** and GP **18** to provide a first fast control loop. (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 2-3, 5; II.C, ¶¶ 2-3)

d. sensing by a second sensor package, which is fixed to the payload platform, a position of the payload platform relative to a predetermined position; and

e. self correcting the position of the payload platform to the predetermined position based on information collected by the second sensor package.

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'second sensor package' as a sensor group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *West* discloses an Optical Sensor Package (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**,

payload support structure **25** and payload attachment flanges **26** combination that forms the 'three dimensional structure on which a payload is attached.' (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the OSP **24** providing information to compensate for drift and errors accumulated during the gyro control. (*Id* at §§ I, ¶ 3; II.B, ¶ 4, II.C, ¶ 3, 11). Since the OSP **24** is specifically mounted on the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached, the Examiner finds that the OSP **24** therefore is rigidly fixed to the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. Thus, the Examiner concludes that the OSP **24** is fixed to the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination.

The Examiner finds that *West* discloses the position/orientation sensing being based on the acquisition, pointing to, and tracking of a variety of astronomical targets, thus, the sensing and providing of positional/orientational information by the GP and OSP is relative to predetermined positions. (*Id*. at §§ II, ¶ 1; A, ¶¶ 1-3). The Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*Id*. at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the OSP **24**/ADF to provide a second slow control loop to compensate for attitude updates and system drift estimates. (*Id*. at §§ I, ¶¶ 2-3; II.B, ¶ 2-3, 5; II.C, ¶¶ 2-3, 11).

With respect to the limitations of claim 31, *West* discloses

a. [a] method of stabilizing and self correcting a camera platform comprising:

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B(1) *supra*).

In this light, the Examiner finds that *West* discloses a combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming a three dimensional structure on which a payload is attached. (*West* at §§ I, ¶ 1; II, ¶ 1; see Figure 1). The Examiner finds that *West* discloses a three-axis stabilized instrument pointing system (IPS) that was developed to point instruments with stability and accuracy. (*West* at §§ I, ¶¶ 1-3; see Figure 1).

b. positioning a stabilized camera platform on a moving vehicle;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *West* discloses a combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload is attached.' (*West* at §§ I, ¶ 1; II, ¶ 1; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the IPS gimbals structure assembly [6] including three identical torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**) being orthogonally oriented to

one another. (See *West* at Figures 1, 2). The Examiner finds that *West* disclose the torque drive units have two redundant frameless, brushless, DC motors that generate torque on the motor housing with respect to a DU shaft to position the combination platform assembly. (*West* at § II.B, ¶ 1; see Figures 1, 2). The Examiner finds that *West* discloses Spacelab pallet and gimbal support structure as defining a "second body" (*i.e.*, base plate **4**, pedestal **6** and support frame work **10**) that is rigidly attached to a "first body" (*i.e.*, shuttle body) that is a moving vehicle. (*West* at § V.A; see Figures 1, 8).

c. continuously stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package fixed relative to the moving vehicle and sensing motion of the moving vehicle;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) supra).

In this light, the Examiner finds that *West* discloses equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination being stabilized by three identical torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**) based upon data collected by accelerometer package (ACP) [**8**] consisting of three analog force pendulums in an orthogonal configuration for sensing motion of the shuttle. (*West* at §§ I, ¶2; II.B, ¶ 2; see Figure 1). The Examiner finds that *West* discloses Spacelab pallet and gimbal support structure as defining a "second body" (*i.e.*, base plate **4**, pedestal **6** and support frame work **10**) that is rigidly attached to a "first body" (*i.e.*, shuttle body) that is moving. (*West* at § V.A; see Figures 1, 8). The Examiner finds that *West* discloses

accelerometer package (ACP) [**8**] being mounted on the IPS lower support framework. (*West* at §§ II.B, ¶ 2; C, ¶ 7; see Figure 1).

The Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8** to provide a first fast control loop. (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 2-3, 5; II.C, ¶¶ 2-3)

d. periodically self correcting a position of the payload platform based on information collected by a second sensor package including a level sensor and mounted on the platform.

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'second sensor package' as a sensor group of sensor elements. (See § V.E.(1) supra).

In this light, the Examiner finds that *West* discloses an Optical Sensor Package (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the OSP **24** providing information to compensate for drift and errors accumulated during the gyro control. (*West* at §§ I, ¶ 3; II.B, ¶ 4; II.C, ¶ 3, 11; see Figure 1). Since the OSP **24** is specifically mounted on the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload

attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached, the Examiner finds that the OSP **24**, therefore, is mounted on the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. Thus, the Examiner concludes that the OSP **24** is mounted on the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination.

The Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the OSP **24**/ADF to provide a second slow control loop to compensate for attitude updates and system drift estimates. (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 2-3, 5; II.C, ¶¶ 2-3, 11). The Examiner finds that attitude is "the position of an aircraft or spacecraft determined by the relationship between its axes and a reference datum (as the horizon or a particular star)."[14] The Examiner finds that *West* discloses the OSP **24** having three (3) fixed head star trackers (FHST's) that are utilized to provide independent measurements of the observability of the roll attitude and roll drift of the IPS. The Examiner finds that these error measurements, by each FHST determining the attitude of the platform and payload relative to the feature which the OSP **24** is tracking, would be a determination of the error in the level of the feature relative to the desired location of the platform and payload. Thus, the ADF would be providing error determinations on how level the platform is based upon the feature the OSP is tracking.

[14] Merriam Webster's Collegiate Dictionary, Tenth Edition. 1996 p.75.

With respect to the limitations of claim 32, *West* discloses

a. [a] stabilized platform comprising:

The Examiner finds that *West* discloses a three-axis stabilized instrument pointing system (IPS) that was developed to point instruments with stability and accuracy. (*West* at §§ I, ¶¶ 1-3; see Figure 1).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *West* discloses a combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload is attached.' (*West* at §§ I, ¶ 1; II, ¶ 1; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto).

c. a base;

The Examiner finds that *West* discloses Spacelab pallet and gimbal support structure as defining a "second body" that is rigidly attached to a "first body" (*i.e.*, shuttle body). (*West* at § V.A; see Figures 1, 8). The Examiner finds that the base would constitute the combination of 'body two' including base plate **4**, pedestal **6** and support frame work **10**. (See comparison of Figures 1 and 8 of *West*).

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id.*)

In this light, the Examiner finds that *West* discloses the IPS gimbals structure assembly [6] including three identical torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**) being orthogonally oriented to one another. (See *West* at Figures 1, 2). The Examiner finds that *West* disclose the torque drive units have two redundant frameless, brushless, DC motors that generate torque on the motor housing with respect to a DU shaft. (*West* at § II.B, ¶ 1; see Figures 1, 2). The Examier finds that *West* discloses each DU having a single speed and multispeed resolver set. (*Id.*) The Examiner finds that a 'resolver' is a type of encoder that is known in the art for positioning measurement of the shaft of a motor.[15] The Examiner finds this motor, motor shaft and resolver configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) supra).

In this light, the Examiner finds that *West* discloses accelerometer package (ACP) [8]

[15] See ***Gerretz et al***. (U.S. Patent No. 5,291,108) at c.4, l.67 –c.5, l.13; see Figure 1.

consisting of three analog force pendulums in an orthogonal configuration for sensing motion of the shuttle. (*West* at § II.B, ¶ 2; see Figure 1).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *West* discloses a three-axis strap-down inertial reference unit, gyro package (GP) [**18**], being mounted on the underside of the equipment platform **22**. (*West* at § II.B, ¶ 3; see Figure 1). The Examiner finds that the GP uses three orthogonally integrating rate mode gyroscopes with a fourth being skewed for redundancy purposes to provide orientation/motion measurement of the shuttle. (*Id*. at §§ I, ¶ 2; II.B, ¶ 3). In addition, the Examiner finds that *West* discloses an Optical Sensor Package (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the OSP **24** providing information to compensate for drift and errors accumulated during the gyro control. (*Id* at §§ I, ¶ 3; II.C, ¶ 3, 11). The Examiner finds that *West* discloses the position/orientation sensing being based on the acquisition, pointing to, and tracking of a variety of astronomical targets,

thus, the sensing and providing of positional/orientational information by the GP and OSP is relative to predetermined positions. (*Id*. at §§ II, ¶ 1; A, ¶¶ 1-3).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 4 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(4) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system. [16]

In this light, the Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8**, GP **18** and OSP **24**, respectively, and controls the stabilization of the payload. (*Id*.)

h. wherein the second sensor package is fixed to the payload platform, and

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) supra). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

[16] The Examiner finds that Owner does not challenge and agrees with the construction of Functional Phrase 4. (See Mar I 2020 PO Response at 2-3). The Examiner will hereby rely on Owner's statements regarding agreement with the structural construction the Functional Phrase 4 to advance prosecution of this patent reexamination. See 37 C.F.R. §1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability . . . . [Emphasis added.]"

In this light, the Examiner finds that *West* discloses a combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload is attached.' (*West* at §§ I, ¶ 1; II, ¶ 1; see Figure 1). The Examiner finds that *West* discloses a three-axis strap-down inertial reference unit, gyro package (GP) [**18**], being mounted on the underside of the equipment platform **22**. (*Id.* at § II.B, ¶ 3). In addition, the Examiner finds that *West* discloses the Optical Sensor Package (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of ""IPS components" only, not "IPS components" with additional payload attached thereto). Since the OSP **24** is specifically mounted on the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached, the Examiner finds that the OSP **24**, therefore, is rigidly fixed to the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. Thus, the Examiner concludes that both the GP **18** and OSP **24** are fixed to the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination.

i. wherein the control system allows a user to set an initial payload platform position and provides self correction of the platform to the initial position.

As set forth *supra*, the Examiner finds that Functional Phrase 4 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(4) *supra*). The Examiner construes a 'control system …' as a

digital or analog generic control system. With respect to the limitation of "allow[ing] a user to set an initial payload platform position," the Examiner finds that the '662 Patent discloses the preset position be "with respect to the earth's horizon and a magnetic course heading." ('662 Patent at c.4, ll.58-61).

In this light, the Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that *West* discloses the position/orientation sensing being based on the acquisition, pointing to, and tracking of a variety of astronomical targets, thus, the sensing and providing of positional/orientational information by the GP and OSP is relative to predetermined positions which are set by users of the IPS. (*Id.* at §§ II, ¶ 1; A, ¶¶ 1-3; emphasis on "manual point" at § II.A, ¶ 3). The Examiner finds that the digital controller receives feedback from the ACP **8**, GP **18** and OSP **24**, respectively, and controls the stabilization of the payload. (*Id.* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3, 11). The Examiner finds that the digital controller receives feedback from the OSP **24**/ADF to provide a second slow control loop to compensate for attitude updates and system drift estimates. (*Id.*)

With respect to the limitations of claim 35, *West* discloses

a. [a] stabilized platform comprising:

The Examiner finds that *West* discloses a three-axis stabilized instrument pointing system (IPS) that was developed to point instruments with stability and accuracy. (*West* at §§ I, ¶¶ 1-3; see Figure 1).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *West* discloses a combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload is attached.' (*West* at §§ I, ¶ 1; II, ¶ 1; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto).

c. base;

The Examiner finds that *West* discloses Spacelab pallet and gimbal support structure as defining a "second body" that is rigidly attached to a "first body" (*i.e.*, shuttle body). (*West* at § V.A; see Figures 1, 8). The Examiner finds that the base would constitute the combination of 'body two' including base plate **4**, pedestal **6** and support frame work **10**. (See comparison of Figures 1 and 8 of *West*).

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id.*)

In this light, the Examiner finds that *West* discloses the IPS gimbals structure assembly [6] including three identical torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**) being orthogonally oriented to one another. (See *West* at Figures 1, 2). The Examiner finds that *West* disclose the torque drive units have two redundant frameless, brushless, DC motors that generate torque on the motor housing with respect to a DU shaft. (*West* at § II.B, ¶ 1; see Figures 1, 2). The Examier finds that *West* discloses each DU having a single speed and multispeed resolver set. (*Id.*) The Examiner finds that a 'resolver' is a type of encoder that is known in the art for positioning measurement of the shaft of a motor.[17] The Examiner finds this motor, motor shaft and resolver configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) supra).

In this light, the Examiner finds that *West* discloses accelerometer package (ACP) [8] consisting of three analog force pendulums in an orthogonal configuration for sensing motion of the shuttle. (*West* at § II.B, ¶ 2; see Figure 1).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements.

[17] See ***Gerretz et al***. (U.S. Patent No. 5,291,108) at c.4, l.67 –c.5, l.13; see Figure 1.

(See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *West* discloses a three-axis strap-down inertial reference unit, gyro package (GP) [**18**], being mounted on the underside of the equipment platform **22**. (*West* at § II.B, ¶ 3; see Figure 1). The Examiner finds that the GP uses three orthogonally integrating rate mode gyroscopes with a fourth being skewed for redundancy purposes to provide orientation/motion measurement of the shuttle. (*Id*. at §§ I, ¶ 2; II.B, ¶ 3). In addition, the Examiner finds that *West* discloses an Optical Sensor Package (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of ""IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the OSP **24** providing information to compensate for drift and errors accumulated during the gyro control. (*Id* at §§ I, ¶ 3; II.B, ¶ 4, II.C, ¶ 3, 11). The Examiner finds that *West* discloses the position/orientation sensing being based on the acquisition, pointing to, and tracking of a variety of astronomical targets, thus, the sensing and providing of positional/orientational information by the GP and OSP is relative to predetermined positions. (*Id*. at §§ II, ¶ 1; A, ¶¶ 1-3).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 3 does invoke 35 U.S.C.

§112, 6th paragraph. (See § V.D.(3) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system. [18]

In this light, the Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8**, GP **18** and OSP **24**, respectively, and controls the stabilization of the payload. (*Id.*)

h. wherein the second sensor package is fixed to the payload platform, and

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *West* discloses a combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload is attached.' (*West* at §§ I, ¶ 1; II, ¶ 1; see Figure 1). The Examiner finds that *West* discloses a three-axis strap-down inertial reference unit, gyro package (GP) [**18**], being mounted on the underside of the equipment platform **22**. (*Id.* at § II.B, ¶ 3). In addition, the Examiner finds that *West* discloses the Optical Sensor Package

[18] The Examiner finds that Owner does not challenge and agrees with the construction of Functional Phrase 3. (See Mar I 2020 PO Response at 2). The Examiner will hereby rely on Owner's statements regarding agreement with the structural construction the Functional Phrase 3 to advance prosecution of this patent reexamination. See 37 C.F.R. §1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability . . . . [Emphasis added.]"

(OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). Since the OSP **24** is specifically mounted on the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached, the Examiner finds that the OSP **24**, therefore, is rigidly fixed to the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached.

Thus, the Examiner concludes that both the GP **18** and OSP **24** are fixed to the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination.

i. wherein the first sensor package comprises sensors for sensing a different type of information from the sensor means in the second sensor package.

As set forth *supra*, the Examiner construes a 'first/second sensor package' as a first and second group of sensor elements. (See § V.E.(1) supra).). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *West* discloses accelerometer package (ACP) [8] consisting of three analog force pendulums in an orthogonal configuration for sensing motion of

the shuttle being mounted on the IPS lower support framework. (*West* at §§ II.B, ¶ 2; C, ¶ 7; see Figure 1). In addition, the Examiner finds that *West* discloses the three-axis strap-down inertial reference unit, gyro package (GP) [**18**] uses three orthogonally integrating rate mode gyroscopes with a fourth being skewed for redundancy purposes to provide orientation/motion measurement of the shuttle (*id*. at §§ I, ¶ 2; II.B, ¶ 3) and the Optical Sensor Package (OSP) [**24**] providing inertial measurement to compensate for drift and errors accumulated during the gyro control. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; C, ¶¶ 3, 11). The Examiner finds the analog force pendulum measurements sensed by the ACP **8** as being different from both the rate motion sensed by the GP **18** and the inertial measurements determined by the OSP **24**.

With respect to the limitations of claim 38, *West* discloses

a. [a] stabilized platform comprising:

The Examiner finds that *West* discloses a three-axis stabilized instrument pointing system (IPS) that was developed to point instruments with stability and accuracy. (*West* at §§ I, ¶¶ 1-3; see Figure 1).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *West* discloses a combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload is attached.' (*West* at §§ I, ¶ 1; II, ¶ 1;

see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto).

c. base;

The Examiner finds that *West* discloses Spacelab pallet and gimbal support structure as defining a "second body" that is rigidly attached to a "first body" (*i.e.*, shuttle body). (*West* at § V.A; see Figures 1, 8). The Examiner finds that the base would constitute the combination of 'body two' including base plate **4**, pedestal **6** and support frame work **10**. (See comparison of Figures 1 and 8 of *West*).

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id.*)

In this light, the Examiner finds that *West* discloses the IPS gimbals structure assembly [6] including three identical torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**) being orthogonally oriented to one another. (See *West* at Figures 1, 2). The Examiner finds that *West* disclose the torque drive units have two redundant frameless, brushless, DC motors that generate torque on the motor housing with respect to a DU shaft. (*West* at § II.B, ¶ 1; see Figures 1, 2). The Examier finds that *West* discloses each DU having a single speed and multispeed resolver set. (*Id.*) The Examiner finds that a 'resolver' is a

type of encoder that is known in the art for positioning measurement of the shaft of a motor.[19] The Examiner finds this motor, motor shaft and resolver configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) supra).

In this light, the Examiner finds that *West* discloses accelerometer package (ACP) **[8]** consisting of three analog force pendulums in an orthogonal configuration for sensing motion of the shuttle. (*West* at § II.B, ¶ 2; see Figure 1). The Examiner finds that *West* discloses a three-axis strap-down inertial reference unit, gyro package (GP) **[18]**, being mounted on the underside of the equipment platform **22**. (*West* at § II.B, ¶ 3; see Figure 1). The Examiner finds that the GP uses three orthogonally integrating rate mode gyroscopes with a fourth being skewed for redundancy purposes to provide motion measurement of the shuttle. (*Id*. at §§ I, ¶ 2; II.B, ¶ 3).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

[19] See ***Gerretz et al***. (U.S. Patent No. 5,291,108) at c.4, l.67 –c.5, l.13; see Figure 1.

In this light, In addition, the Examiner finds that *West* discloses an Optical Sensor Package (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the 'three dimensional structure on which a payload is attached.' (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the OSP **24** providing information to compensate for drift and errors accumulated during the gyro control. (*Id* at §§ I, ¶ 3; II.B, ¶ 4, II.C, ¶ 3, 11). The Examiner finds that *West* discloses the position/orientation sensing being based on the acquisition, pointing to, and tracking of a variety of astronomical targets, thus, the sensing and providing of positional/orientational information by the GP and OSP is relative to predetermined positions. (*Id*. at §§ II, ¶ 1; A, ¶¶ 1-3).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 5 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(5) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system. [20] As set forth *supra*, the Examiner construes a 'first/second sensor package' as a first and second group of sensor elements. (See § V.E.(1) supra).

[20] The Examiner finds that Owner does not challenge and agrees with the construction of Functional Phrase 5. (See Mar I 2020 PO Response at 3). The Examiner will hereby rely on Owner's statements regarding agreement with the structural construction the Functional Phrase 5 to advance prosecution of this patent reexamination. See 37 C.F.R. §1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability . . . . [Emphasis added.]"

In this light, the Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8**, GP **18** and OSP **24**, respectively, and controls the stabilization of the payload. (*Id.*)

h. wherein the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package.

As set forth *supra*, the Examiner finds that Functional Phrase 5 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(5) *supra*).[21] The Examiner construes a 'control system…' as a digital or analog generic control system. As set forth *supra*, the Examiner construes a 'first/second sensor package' as a first and second group of sensor elements. (See § V.E.(1) supra).

In this light, the Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8** and GP **18** to provide a first fast control loop (*i.e.*, 25 Hz). (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the OSP **24**/ADF to provide a second slow control loop (*i.e.*, 1 Hz) to compensate for attitude updates and system drift estimates. (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3, 11).

[21] *Id.*

B. Issue 2 (Based on SNQ 1 – West, Wessling and Hartmann)

(1) Claim(s) 1, 3, 4, 14, 31, 32, 35 and 38 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over ***West*** in view of ***Wessling*** and ***Hartmann***.

With respect to the limitations of claims 1, 3, 4, 14, 31, 32 and 35, the Examiner finds that *West* discloses all the limitation as set forth above. (See § VI.A.(1) *supra*.). With respect to the limitation(s) of:

wherein the second sensor package is fixed to/mounted on the payload platform;

To the degree a reviewing body finds that it is not inherent that *West* teaches "the second sensor package ***is fixed to/mounted on*** the payload platform," (emphasis added on the "equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload is attached')," the following alternative to this feature is provided as set forth below:

While *West* discloses all the limitations as set forth above, *West* is silent to the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload is attached' and the second sensor package being fixed to or mounted to the payload platform.

However, a payload platform being constructed to form a three dimensional support structure from the equipment platform, attachment ring, payload support structure and payload attachment flanges and a second sensor package being fixed to or mounted to the payload platform is known in the art. The Examiner finds that both *Wessling* and *Hartmann* teach the same instrument pointing system (IPS) as disclosed in *West* with further detail on the payload

platform structure and functionality. (See *Wessling* at §§ "Abstract" and "IPS"; see Figures 1, 2; and *Hartmann* at §§ "Abstract" and "IPS Description"; see Figures 1, 2).

The Examiner finds that *Wessling*, for example, teaches the "generic IPS supplied by Dornier" as having the "instrument payload, on the Payload Support Structure, attach[ing] to the IPS through the use of the Payload Attachment Ring and Payload Attachment Flanges." (*Wessling* at § Gimbal Structure Assembly, sent 6-7; see Figure 1 for "generic IPS" statement). The Examiner finds that the "generic IPS supplied by Dornier" in Figure 1 of *Wessling*, is the same as Figure 1 of *West* in which at least the and OSP **24** is fixed to /mounted to the three dimensional structure of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26**.

Similarly, the Examiner finds that *Hartmann*, for example, teaches Figure 1 being the IPS that was flown on the Spacelab 2 mission. (*Hartmann* at Abstract, ¶ 1; § 1, ¶ 1; see Figure 1). The Examiner finds that the IPS flown on the Spacelab mission in Figure 1 of *Hartmann*, is the same as Figure 1 of *West* in which the gyro package (GP) [**18**] and OSP **24** are fixed to /mounted to the three dimensional structure of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26**. Moreover, *Hartmann* discloses the OSP being mounted on the payload that is actual part of the generic IPS payload platform. (*Id*. at p. 17-2, § 1.2, ¶ 3). In addition, the Examiner finds that *Hartmann* teaches another embodiment of the IPS being utilized on a space truss structure in which the gyro package (GP) and OSP are again fixed to/mounted on the equipment platform **22**, attachment ring **23**, payload support structure **25**. (*Id*. at p.17-9, § 4, ¶ 2; see Figure 8 with emphasis on the gyro package (GP) and OSP being mounted directly on the equipment platform **22**, attachment ring **23**, payload support structure **25**).

The Examiner finds that that it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the payload platform being constructed to form a three dimensional support structure from the equipment platform, attachment ring, payload support structure and payload attachment flanges and the second sensor package being fixed to or mounted to the payload as described in *Wessling* and *Hartmann* in the stabilized platform and method of stabilizing and self correcting a camera platform of *West*.

A person of ordinary skill in the art would be motivated to incorporate the payload platform being constructed to form a three dimensional support structure from the equipment platform, attachment ring, payload support structure and payload attachment flanges and the second sensor package being fixed to or mounted to the payload, since it provides a mechanism to minimize misalignments. (*Id.* at p. 17-2, § 1.2, ¶ 3). In other words, such a modification would have provided a stabilized platform and method of stabilizing and self correcting a camera platform that increases the sensitivity and accuracy of the stabilized platform capabilities, thereby increasing the operational efficiency of the stabilized platform and method.

With respect to the limitations of claim 32, the Examiner finds that *West* discloses all the limitation as set forth above. (See § VI.A.(1) *supra*.). With respect to the limitation(s) of:

wherein the control system allows a user to set an initial payload platform position

To the degree a reviewing body finds that it is not inherent that *West* teaches "the control system allows a user to set an initial payload platform position," the following alternative to this feature is provided as set forth below:

While *West* discloses all the limitations as set forth above, *West* is silent to the control system allowing a user to set an initial payload platform position.

However, a payload platform that includes a control system allowing a user to set an initial payload platform position is known in the art. The Examiner finds that both *Wessling* and *Hartmann* teach the same instrument pointing system (IPS) as disclosed in *West* with further detail on the payload platform structure and functionality. (See *Wessling* at §§ "Abstract" and "IPS"; see Figures 1, 2; and *Hartmann* at §§ "Abstract" and "IPS Description"; see Figures 1, 2).

The Examiner finds that *Wessling*, for example, teaches the "generic IPS supplied by Dornier" as having a "Manual Target Acquisition" followed by "Lock On (any) Target" (MTA/LOT) mode of operation. (*Wessling* at § IPS Target Acquisition and Fine Pointing Modes). Similarly, the Examiner finds that *Hartmann*, for example, teaches the IPS being moved close to a position which is located on a predefined trajectory and then utilizing automated process to maintain tracking. (*Hartmann* at pp.17-7 -17-8; emphasis on § (2)).

The Examiner finds that that it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the payload platform that includes a control system allowing a user to set an initial payload platform position as described in *Wessling* and *Hartmann* in the stabilized platform and method of stabilizing and self correcting a camera platform of *West*.

A person of ordinary skill in the art would be motivated to incorporate the control system allowing a user to set an initial payload platform position, since it provides a mechanism to place the target at the center of instrument's field of view. (*Wessling* at § IPS Target Acquisition and Fine Pointing Modes). In other words, such a modification would have provided a stabilized platform and method of stabilizing and self correcting a camera platform that increases the sensitivity and accuracy of the stabilized platform capabilities, thereby increasing the operational efficiency of the stabilized platform and method.

With respect to the limitations of claim 38, the Examiner finds that *West* discloses all the limitation as set forth above. (See § VI.A.(1) *supra*.). With respect to the limitation(s) of:

wherein the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package

To the degree a reviewing body finds that it is not inherent that *West* teaches "the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package," the following alternative to this feature is provided as set forth below:

While *West* discloses all the limitations as set forth above, *West* is silent to the control system responding to information from the first sensor package more often than the control system responds to information from the second sensor package.

However, a stabilization platform comprising a control system that responds to information from the first sensor package more often than the control system responds to information from the second sensor package is known in the art. The Examiner finds that both *Wessling* and *Hartmann* teach the same instrument pointing system (IPS) as disclosed in *West* with further detail on the payload platform structure and functionality. (See *Wessling* at §§ "Abstract" and "IPS"; see Figures 1, 2; and *Hartmann* at §§ "Abstract" and "IPS Description"; see Figures 1, 2).

The Examiner finds that *Wessling*, for example, teaches an instrument positioning system (IPS) utilizing a adaptable multirate, multivariable digital control system to control elevation, cross elevation and drive units allowing the IPS to point to targets. (*Wessling* at § Gimbal Structure Assembly). The Examiner finds that the digital controller receives feedback from the

gyro, resolver and accelerometer to provide a first fast control loop (*i.e.*, 100 Hz). (*Id.* at § Data electronics Assembly). The Examiner finds that the digital controller receives feedback from the Optical Sensor Package to provide a second slow control loop (*i.e.*, 25 Hz). (*Id.* at §§ Data electronics Assembly, Attitude Measurement Assembly).

Similarly, the Examiner finds that *Hartmann* teaches an instrument positioning system (IPS) utilizing a adaptable multirate, multivariable digital control system to control elevation, cross elevation and drive units allowing the IPS to point to targets. (*Hartmann* at pp.17-3, § (2), ¶ 3; § (2.1), ¶ 1); see Figures 1, 2). The Examiner finds that the digital controller receives feedback from the gyro package to provide a first fast control loop (*i.e.*, 100 Hz). (*Id.*) The Examiner finds that the digital controller receives feedback from the Optical Sensor Package to provide a second slow control loop (*i.e.*, 1 Hz). (*Id.*)

The Examiner finds that that it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the stabilization platform including a control system that responds to information from the first sensor package more often than the control system responds to information from the second sensor package as described in *Wessling* and *Hartmann* in the stabilized platform of *West*.

A person of ordinary skill in the art would be motivated to incorporate the control system responding to information from the first sensor package more often than the control system responding to information from the second sensor package, since it provides a mechanism to compensate for attitude updates and system drift estimates. (*Wessling* at §§ Data electronics Assembly, Attitude Measurement Assembly; and *Hartmann* at pp.17-3, § (2), ¶ 3; § (2.1), ¶ 1)). In other words, such a modification would have provided a stabilized platform that increases the sensitivity and accuracy of the stabilized platform capabilities, thereby increasing the operational

efficiency of the stabilized platform and method.

C. Issue 3 (Based on SNQ 2 – Tijsma)

(1) Claim(s) 1, 3, 4, 14, 31, 32 and 35 are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by ***Tijsma*.**

With respect to the limitations of claim 1, *Tijsma* discloses

a. [a] stabilized platform comprising:

The Examiner finds that *Tijsma* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying a radar antenna system on a ship. (*Tijsma* at Abstract; c.1, ll.5-9; 20-36; c.2, ll.41-46; see Figure 1).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses a platform **3** forming 'a three dimensional structure on which a payload is attached.' (*Tijsma* at c.2, ll.41-45; see Figure 1).

c. a base;

The Examiner finds that *Tijsma* discloses an outer gimbal ring **5** being mounted parallel to the deck of the ship. (*Id*. at c.2, ll.45-46; see Figure 1).

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id.*)

In this light, the Examiner finds that *Tijsma* discloses a stabilization system including motors **13**, **14** with each having a gear transmission **16**. (*Tijsma* at c.3, ll.3-8; see Figure 1). The Examiner finds that *Tijsma* further discloses the motors having a tacho generators providing feedback with respect to the motor shaft position. (*Id.* at c.1, ll.10-11, 37-39; c.4, ll.4-6; see Figures 1, 2). The Examiner finds this motor, motor shaft and tacho generator configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses each orthogonal motor axis **1**, **2** having two angular velocity sensors **28**, **29** mounted on the outer gimbal ring **5** that is attached to the ship. (*Tijsma* at c.1, ll.47-50, c.2, 28-30; c.3, ll.54-62; see Figure 1). The Examiner finds that *Tijsma* discloses each respective angular velocity sensor **28**, **29** are either rate gyros or angular accelerometers. (*Id.*) The Examiner finds that *Tijsma* discloses an outer gimbal ring **5** of the stabilization system being mounted parallel to the deck of the ship. (*Id.* at c.2, ll.45-46; see

Figure 1).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *Tijsma* discloses the platform **3** having a vertical gyro **7** within a gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) to provide information relative to horizontal 'levelness' of the platform **3**. (*Tijsma* at c.2, ll.47-49, 59-62; c.2, l.67 – c.3, l.8). The Examiner finds that *Tijsma* discloses the predetermined position of the platform **3** being based on the vertical position of the gyro **7** relative to the spin axis directed normal to the earth's surface. (*Id*. at c.3, ll.47-50).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 3 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(3) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system.

In this light, the Examiner finds that *Tijsma* discloses the stabilization system including servo preamplifier **12** connected to servo final amplifier **15** that provides stabilization about each of the motorized axis **1**, **2** of the platform **3**. (*Tijsma* at c.1, ll.5-14; c.3, ll.3-39; see Figure 1).

h. wherein the second sensor package is fixed to the payload platform, and

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses a platform **3** forming 'a three dimensional structure on which a payload is attached.' (*Tijsma* at c.2, ll.41-45; see Figure 1).The Examiner finds that *Tijsma* discloses a gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) being carried by the platform **3**. (*Id.* at c.2, ll.46-48; see Figure 1). Since the gyroscope housing **6** is specifically carried by and in direct contact with the platform **3**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **6**, therefore, is rigidly fixed to the platform **3** that forms the three dimensional structure on which a payload is attached.

Thus, the Examiner concludes that the gyroscope housing **6**, including synchros **10**, **11**, is fixed to the platform **3**.

i. the first sensor package is fixed with respect to the base.

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, In this light, the Examiner finds that *Tijsma* discloses the two angular velocity sensors **28**, **29** being mounted to the outer gimbal ring **5** that is attached to the ship. (*Tijsma* at

c.1, ll.47-50, c.2, 28-30; c.3, ll.54-62; see Figure 1).

With respect to the limitations of claim 3, *Tijsma* discloses

wherein the second sensor package includes two level sensors for sensing a position of the payload platform in two perpendicular directions.

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition, the Examiner finds that the '662 Patent discloses the second sensor package being one or more motions sensors with the sensors preferably being level sensors. ('662 Patent at c.4, ll.40-43).

In this light, the Examiner finds that *Tijsma* discloses the platform **3** having a vertical gyro **7** within a gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) to provide information relative to horizontal 'levelness' of the platform **3**. (*Tijsma* at c.2, ll.47-49, 59-62; c.2, l.67 – c.3, l.8). The Examiner finds that *Tijsma* discloses the synchros **10**, **11** (*i.e.*, level sensors) being orthogonal to each other. (*Id.*; see Figure 1).

With respect to the limitations of claim 4, *Tijsma* discloses

wherein the second sensor package is mounted on the payload platform

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses the platform **3** forming 'a three dimensional structure on which a payload is attached.' (*Tijsma* at c.2, ll.41-45; see Figure 1). The

Examiner finds that *Tijsma* discloses the gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) being carried by the platform **3**. (*Id.* at c.2, ll.46-48; see Figure 1). Since the gyroscope housing **6** is specifically carried by and in direct contact with the platform **3**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **6**, therefore, as is indicated by Figure 1 of *Tijsma*, is mounted to/on the platform **3** that forms the three dimensional structure on which a payload is attached.

Thus, the Examiner concludes that the gyroscope housing **6**, including synchros **10**, **11**, is mounted on the platform **3**.

With respect to the limitations of claim 14, *Tijsma* discloses

a. **[a] method of stabilizing and self correcting a camera platform comprising:**

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses a platform **3** forming 'a three dimensional structure on which a payload is attached.' (*Tijsma* at c.2, ll.41-45; see Figure 1). The Examiner finds that *Tijsma* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying a radar antenna system on a ship. (*Tijsma* at Abstract; c.1, ll.5-9; 20-36; c.2, ll.41-46; see Figure 1).

b. positioning a stabilized camera platform on a moving object;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses the platform **3** forming 'a three dimensional structure on which a payload is attached.' (*Tijsma* at c.2, ll.41-45; see Figure 1). The Examiner finds that *Tijsma* discloses a stabilization system including motors **13**, **14** with each having a gear transmission **16**. (*Tijsma* at c.3, ll.3-8; see Figure 1). The Examiner finds that *Tijsma* further discloses the motors having a tacho generators providing feedback with respect to the motor shaft position. (*Id*. at c.1, ll.10-11, 37-39; c.4, ll.4-6; see Figures 1, 2). The Examiner finds this motor, motor shaft and tacho generator configuration as equivalent to the motor, drive shaft and encoder of the '662 patent. The Examiner finds that *Tijsma* discloses an outer gimbal ring **5** of the stabilization system being mounted parallel to the deck of the ship that is moving. (*Id*. at c.2, ll.45-46; see Figure 1).

c. stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package sensing motion of the moving object independent of motion of the payload platform;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses the platform **3** being stabilized by two identical motor units (*i.e.*, motors **13**, **14**; gear transmission **16**; etc.) based upon data

collected by two angular velocity sensors **28**, **29** mounted on the outer gimbal ring **5** that is attached to the ship. (*Tijsma* at c.1, ll.47-50, c.2, 28-30; c.3, ll.54-62; see Figure 1). The Examiner finds that *Tijsma* discloses the stabilization system including servo preamplifier **12** connected to servo final amplifier **15** that provides stabilization about each of the motorized axis **1**, **2** of the platform **3**. (*Tijsma* at c.1, ll.5-14; c.3, ll.3-39; see Figure 1). The Examiner finds that *Tijsma* discloses the servo final amplifier **15** receives feedback from the two angular velocity sensors **28**, **29** to compensate for errors arising in the servo system. (*Id.* at c.3, ll.54-62; see Figure 1).

d. sensing by a second sensor package, which is fixed to the payload platform, a position of the payload platform relative to a predetermined position; and

e. self correcting the position of the payload platform to the predetermined position based on information collected by the second sensor package.

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'second sensor package' as a sensor group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses the gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) being carried by the platform **3** that forms 'a three dimensional structure on which a payload is attached.' (*Id.* at c.2, ll.41-48; see Figure 1). Since the gyroscope housing **6** is specifically carried by and in direct contact with the platform **3**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **6**, therefore, as is indicated by Figure 1 of *Tijsma*, is fixed to the platform **3** that forms the three dimensional structure on which a payload is attached.

Moreover, the Examiner finds that *Tijsma* discloses the predetermined position of the platform **3** being based on the vertical position of the gyro **7** relative to the spin axis directed normal to the earth's surface. (*Id.* at c.3, ll.47-50). The Examiner finds that *Tijsma* discloses the platform **3** having a vertical gyro **7** within a gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) to provide information relative to horizontal 'levelness' of the platform **3**. (*Tijsma* at c.2, ll.47-49, 59-62; c.2, l.67 – c.3, l.8). The Examiner finds that *Tijsma* discloses the stabilization system including servo preamplifier **12** connected to servo final amplifier **15** that receive the information relative to horizontal 'levelness' of the platform **3** to provide self-correcting stabilization about each of the motorized axis **1**, **2** of the platform **3**. (*Tijsma* at c.1, ll.5-14; c.3, ll.3-39; see Figure 1).

With respect to the limitations of claim 31, *Tijsma* discloses

a. [a] method of stabilizing and self correcting a camera platform comprising:

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses a platform **3** forming 'a three dimensional structure on which a payload is attached.' (*Tijsma* at c.2, ll.41-45; see Figure 1). The Examiner finds that *Tijsma* discloses a two-axis stabilized system that was developed for stabilization of the platform carrying a radar antenna system on a ship. (*Tijsma* at Abstract; c.1, ll.5-9; 20-36; c.2, ll.41-46; see Figure 1).

b. positioning a stabilized camera platform on a moving vehicle;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses the platform **3** forming 'a three dimensional structure on which a payload is attached.' (*Tijsma* at c.2, ll.41-45; see Figure 1). The Examiner finds that *Tijsma* discloses a stabilization system including motors **13**, **14** with each having a gear transmission **16**. (*Tijsma* at c.3, ll.3-8; see Figure 1). The Examiner finds that *Tijsma* further discloses the motors having a tacho generators providing feedback with respect to the motor shaft position. (*Id*. at c.1, ll.10-11, 37-39; c.4, ll.4-6; see Figures 1, 2). The Examiner finds this motor, motor shaft and tacho generator configuration as equivalent to the motor, drive shaft and encoder of the '662 patent. The Examiner finds that *Tijsma* discloses an outer gimbal ring **5** of the stabilization system being mounted parallel to the deck of the ship that is moving. (*Id*. at c.2, ll.45-46; see Figure 1).

c. continuously stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package fixed relative to the moving vehicle and sensing motion of the moving vehicle;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses the platform **3** being stabilized by two identical motor units (*i.e.*, motors **13**, **14**; gear transmission **16**; etc.) based upon data

collected by two angular velocity sensors **28**, **29** mounted on the outer gimbal ring **5** of the stabilization system that is attached to the ship. (*Tijsma* at c.1, ll.47-50, c.2, 28-30; c.3, ll.54-62; see Figure 1). The Examiner finds that *Tijsma* discloses the stabilization system including servo preamplifier **12** connected to servo final amplifier **15** that provides stabilization about each of the motorized axis **1**, **2** of the platform **3**. (*Tijsma* at c.1, ll.5-14; c.3, ll.3-39; see Figure 1). The Examiner finds that *Tijsma* discloses the servo final amplifier **15** receives feedback from the two angular velocity sensors **28**, **29** to compensate for errors arising in the servo system. (*Id.* at c.3, ll.54-62; see Figure 1).

d. periodically self correcting a position of the payload platform based on information collected by a second sensor package including a level sensor and mounted on the platform.

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'second sensor package' as a sensor group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses the gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) being carried by the platform **3** that forms 'a three dimensional structure on which a payload is attached.' (*Id.* at c.2, ll.41-48; see Figure 1). Since the gyroscope housing **6** is specifically carried by and in direct contact with the platform **3**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **6**, therefore, as is indicated by Figure 1 of *Tijsma*, is mounted on the platform **3** that forms the three dimensional structure on which a payload is attached.

Moreover, the Examiner finds that *Tijsma* discloses the predetermined position of the platform **3** being based on the vertical position of the gyro **7** relative to the spin axis directed normal to the earth's surface. (*Id.* at c.3, ll.47-50). The Examiner finds that *Tijsma* discloses the platform **3** having a vertical gyro **7** within a gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) to provide information relative to horizontal 'levelness' of the platform **3**. (*Tijsma* at c.2, ll.47-49, 59-62; c.2, l.67 – c.3, l.8). The Examiner finds that *Tijsma* discloses the stabilization system including servo preamplifier **12** connected to servo final amplifier **15** that receive the information relative to horizontal 'levelness' of the platform **3** to provide self-correcting stabilization about each of the motorized axis **1**, **2** of the platform **3**. (*Tijsma* at c.1, ll.5-14; c.3, ll.3-39; see Figure 1).

With respect to the limitations of claim 32, *Tijsma* discloses

a. [a] stabilized platform comprising:

The Examiner finds that *Tijsma* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying a radar antenna system on a ship. (*Tijsma* at Abstract; c.1, ll.5-9; 20-36; c.2, ll.41-46; see Figure 1).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses a platform **3** forming 'a three dimensional structure on which a payload is attached.' (*Tijsma* at c.2, ll.41-45; see Figure 1).

c. a base;

The Examiner finds that *Tijsma* discloses an outer gimbal ring **5** being mounted parallel to the deck of the ship. (*Id.* at c.2, ll.45-46; see Figure 1).

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id.*)

In this light, the Examiner finds that *Tijsma* discloses a stabilization system including motors **13**, **14** with each having a gear transmission **16**. (*Tijsma* at c.3, ll.3-8; see Figure 1). The Examiner finds that *Tijsma* further discloses the motors having a tacho generators providing feedback with respect to the motor shaft position. (*Id.* at c.1, ll.10-11, 37-39; c.4, ll.4-6; see Figures 1, 2). The Examiner finds this motor, motor shaft and tacho generator configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses each orthogonal motor axis **1**, **2** having

two angular velocity sensors **28**, **29** mounted on the outer gimbal ring **5** that is attached to the ship. (*Tijsma* at c.1, ll.47-50, c.2, 28-30; c.3, ll.54-62; see Figure 1). The Examiner finds that *Tijsma* discloses each respective angular velocity sensor **28**, **29** are either rate gyros or angular accelerometers. (*Id.*) The Examiner finds that *Tijsma* discloses an outer gimbal ring **5** of the stabilization system being mounted parallel to the deck of the ship. (*Id.* at c.2, ll.45-46; see Figure 1).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *Tijsma* discloses the platform **3** having a vertical gyro **7** within a gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) to provide information relative to horizontal 'levelness' of the platform **3**. (*Tijsma* at c.2, ll.47-49, 59-62; c.2, l.67 – c.3, l.8). The Examiner finds that *Tijsma* discloses the predetermined position of the platform **3** being based on the vertical position of the gyro **7** relative to the spin axis directed normal to the earth's surface. (*Id.* at c.3, ll.47-50).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 3 does invoke 35 U.S.C.

§112, 6th paragraph. (See § V.D.(3) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system.

In this light, the Examiner finds that *Tijsma* discloses the stabilization system including servo preamplifier **12** connected to servo final amplifier **15** that provides stabilization about each of the motorized axis **1**, **2** of the platform **3**. (*Tijsma* at c.1, ll.5-14; c.3, ll.3-39; see Figure 1).

h. wherein the second sensor package is fixed to the payload platform, and

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," the Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses a platform **3** forming 'a three dimensional structure on which a payload is attached.' (*Tijsma* at c.2, ll.41-45; see Figure 1).The Examiner finds that *Tijsma* discloses a gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) being carried by the platform **3**. (*Id.* at c.2, ll.46-48; see Figure 1). Since the gyroscope housing **6** is specifically carried by and in direct contact with the platform **3**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **6**, therefore, is rigidly fixed to the platform **3** that forms the three dimensional structure on which a payload is attached.

Thus, the Examiner concludes that the gyroscope housing **6**, including synchros **10**, **11**, is fixed to the platform **3**.

i. wherein the control system allows a user to set an initial payload platform position and provides self correction of the platform to the initial position.

As set forth *supra*, the Examiner finds that Functional Phrase 4 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(4) *supra*). The Examiner construes a 'control system …' as a digital or analog generic control system. With respect to the limitation of "allow[ing] a user to set an initial payload platform position," the Examiner finds that the '662 Patent discloses the preset position be "with respect to the earth's horizon and a magnetic course heading." ('662 Patent at c.4, ll.58-61).

In this light, the Examier finds that *Tijsma* discloses the vertical position of the gyro **7** relative to the spin axis being brought and held in a vertical position. (*ID*. at c.2, ll.54-58). The Examiner finds that *Tijsma* discloses the predetermined position of the platform **3** being based on the vertical position of the gyro **7** relative to the spin axis directed normal to the earth's surface. (*Id*. at c.3, ll.47-50). When the vertical position of the gyro **7** is brought into a desired vertical position to the earth's normal axis, the Examiner finds that the platform **3** would be positioned level to the earth's horizon. Thus, in light of the '662 patent's disclosure to setting a preset position to the "earth's horizon, the Examiner finds that *Tijsma* discloses the stabilization system allowing a user to set an initial payload platform position.

Moreover, the Examiner finds that *Tijsma* discloses the predetermined position of the platform **3** being based on the vertical position of the gyro **7** relative to the spin axis directed normal to the earth's surface. (*Id*. at c.3, ll.47-50). The Examiner finds that *Tijsma* discloses the platform **3** having a vertical gyro **7** within a gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) to provide information relative to horizontal 'levelness' of the platform **3**. (*Tijsma* at c.2, ll.47-49, 59-62; c.2, l.67 – c.3, l.8). The Examiner finds that *Tijsma* discloses the stabilization system including servo preamplifier **12** connected to servo final amplifier **15** that

receive the information relative to horizontal 'levelness' of the platform **3** to provide self-correcting stabilization about each of the motorized axis **1**, **2** of the platform **3**. (*Tijsma* at c.1, ll.5-14; c.3, ll.3-39; see Figure 1).

With respect to the limitations of claim 35, *Tijsma* discloses

a. [a] stabilized platform comprising:

The Examiner finds that *Tijsma* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying a radar antenna system on a ship. (*Tijsma* at Abstract; c.1, ll.5-9; 20-36; c.2, ll.41-46; see Figure 1).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses a platform **3** forming 'a three dimensional structure on which a payload is attached.' (*Tijsma* at c.2, ll.41-45; see Figure 1).

c. a base;

The Examiner finds that *Tijsma* discloses an outer gimbal ring **5** being mounted parallel to the deck of the ship. (*Id.* at c.2, ll.45-46; see Figure 1).

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id.*)

In this light, the Examiner finds that *Tijsma* discloses a stabilization system including motors **13**, **14** with each having a gear transmission **16**. (*Tijsma* at c.3, ll.3-8; see Figure 1). The Examiner finds that *Tijsma* further discloses the motors having a tacho generators providing feedback with respect to the motor shaft position. (*Id.* at c.1, ll.10-11, 37-39; c.4, ll.4-6; see Figures 1, 2). The Examiner finds this motor, motor shaft and tacho generator configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses each orthogonal motor axis **1**, **2** having two angular velocity sensors **28**, **29** mounted on the outer gimbal ring **5** that is attached to the ship. (*Tijsma* at c.1, ll.47-50, c.2, 28-30; c.3, ll.54-62; see Figure 1). The Examiner finds that *Tijsma* discloses each respective angular velocity sensor **28**, **29** are either rate gyros or angular accelerometers. (*Id.*) The Examiner finds that *Tijsma* discloses an outer gimbal ring **5** of the stabilization system being mounted parallel to the deck of the ship. (*Id.* at c.2, ll.45-46; see

Figure 1).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *Tijsma* discloses the platform **3** having a vertical gyro **7** within a gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) to provide information relative to horizontal 'levelness' of the platform **3**. (*Tijsma* at c.2, ll.47-49, 59-62; c.2, l.67 – c.3, l.8). The Examiner finds that *Tijsma* discloses the predetermined position of the platform **3** being based on the vertical position of the gyro **7** relative to the spin axis directed normal to the earth's surface. (*Id*. at c.3, ll.47-50).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 3 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(3) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system.

In this light, the Examiner finds that *Tijsma* discloses the stabilization system including servo preamplifier **12** connected to servo final amplifier **15** that provides stabilization about each of the motorized axis **1**, **2** of the platform **3**. (*Tijsma* at c.1, ll.5-14; c.3, ll.3-39; see Figure 1).

h. wherein the second sensor package is fixed to the payload platform, and

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," the Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Tijsma* discloses a platform **3** forming 'a three dimensional structure on which a payload is attached.' (*Tijsma* at c.2, ll.41-45; see Figure 1).The Examiner finds that *Tijsma* discloses a gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) being carried by the platform **3**. (*Id.* at c.2, ll.46-48; see Figure 1). Since the gyroscope housing **6** is specifically carried by and in direct contact with the platform **3**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **6**, therefore, is rigidly fixed to the platform **3** that forms the three dimensional structure on which a payload is attached.

Thus, the Examiner concludes that the gyroscope housing **6**, including synchros **10**, **11**, is fixed to the platform **3**.

i. wherein the first sensor package comprises sensors for sensing a different type of information from the sensor means in the second sensor package.

As set forth *supra*, the Examiner construes a 'first/second sensor package' as a first and second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion

or level sensors.

In this light, the Examiner finds that *Tijsma* discloses the two angular velocity sensors **28**, **29** being mounted to the outer gimbal ring **5** that is attached to the ship. (*Tijsma* at c.1, ll.47-50, c.2, 28-30; c.3, ll.54-62; see Figure 1). The Examiner finds that *Tijsma* discloses each respective angular velocity sensor **28**, **29** are either rate gyros or angular accelerometers. (*Id.*) In addition, the Examiner finds that *Tijsma* discloses the platform **3** having a vertical gyro **7** within a gyroscope housing **6** including synchros **10**, **11** (*i.e.*, level sensors) to provide information relative to horizontal 'levelness' of the platform **3**. (*Tijsma* at c.2, ll.47-49, 59-62; c.2, l.67 – c.3, l.8). Thus, the Examiner finds that 'angular velocity' sensed by the angular velocity sensor **28**, **29** as being different from the 'horizontal levelness' sensed by the synchros **10**, **11** (*i.e.*, level sensors).

(2) Claim 38 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over ***Tijsma*** in view of ***West***, ***Wessling*** and ***Hartmann***.

With respect to the limitations of claim 38, the Examiner finds that *Tijsma* discloses all the limitation as set forth above. (See § VII.C.(1) *supra*.). With respect to the limitation(s) of:

> **wherein the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package**

As set forth *supra*, the Examiner finds that Functional Phrase 5 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(5) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system. As set forth *supra*, the Examiner construes a 'first/second sensor package' as a first and second group of sensor elements. (See § V.E.(1) *supra*).

While *Tijsma* discloses all the limitations as set forth above, *Tijsma* is silent to the control system responding to information from the first sensor package more often than the control system responds to information from the second sensor package.

However, a stabilization platform comprising a control system that responds to information from the first sensor package more often than the control system responds to information from the second sensor package is known in the art. The Examiner finds that *West*, for example, teaches an instrument positioning system (IPS) utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**. (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8** and GP **18** to provide a first fast control loop (*i.e.*, 25 Hz). (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the OSP **24**/ADF to provide a second slow control loop (*i.e.*, 1 Hz). In addition, the Examiner finds that both *Wessling* and *Hartmann* teaches the same instrument pointing system (IPS) and control system thereof as disclosed in *West*. (See *Wessling* at § Data Electronics Assembly; and *Hartmann* at pp.17-3, § (2), ¶ 3; § (2.1), ¶ 1).

The Examiner finds that that it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the stabilization platform including a control system that responds to information from the first sensor package more often than the control system responds to information from the second sensor package as described in *West*, *Wessling* and *Hartmann* in the stabilized platform of *Tijsma*.

A person of ordinary skill in the art would be motivated to incorporate the control system responding to information from the first sensor package more often than the control system

responding to information from the second sensor package, since it provides a mechanism to compensate for attitude updates and system drift estimates. (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3, 11). In other words, such a modification would have provided a stabilized platform that increases the sensitivity and accuracy of the stabilized platform capabilities, thereby increasing the operational efficiency of the stabilized platform and method.

D. Issue 4 (Based on SNQ 3 – Bos)

(1) Claim(s) 1, 3, 4, 14, 31, 32 and 35 are rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by ***Bos*.**

With respect to the limitations of claim 1, *Bos* discloses

a. [a] stabilized platform comprising:

The Examiner finds that *Bos* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying a radar installation on a ship. (*Bos* at Abstract; c.1, ll.5-11; c.1, l.63 – c.2, l.44; see Figure 1).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses a platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1).

c. a base;

The Examiner finds that *Bos* discloses a gimbal frame **3** being fixed parallel to the deck of the ship. (*Id.*)

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id.*)

In this light, the Examiner finds that *Bos* discloses a stabilization system including two servo motors **6**, **7** with each having a gear transmission **8**, **9**. (*Bos* at c.2, ll.4-9, 26-39; c.3, ll.12-17; see Figure 1). Since *Bos* discloses the motors being 'servo motors,' the Examiner finds that motors **6**, **7** of *Bos* are known in the art to include and require an 'encoder' to provide accurate feedback information on the motor velocity.[22] The Examiner finds this motor, motor shaft and inherent encoder configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor

[22] See ***Mooney et al***. (U.S. Patent No. 6,124,885) at c.1, ll.58-59; see Figure 1; and ***Howell*** (U.S. Patent No. RE36,341) at c.4, ll.44-45, 57-64.

elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses each orthogonal motors **6**, **7** receiving feedback from synchro transmitters **41**, **42** of gyro stabilization system **26** that sense the position relative to horizontal axis **4**, **5** of the gimbal frame **3** being fixed parallel to the deck of the ship. (*Bos* at c.1, l.63 – c.2, l.9; c.3, ll.3-17; c.4, ll.4-13; see Figure 1).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*).). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *Bos* discloses two accelerometers **21**, **22** and a gyroscope housing **11**, having synchro transmitters **12**, **13** therein, to indicate the horizontal status of the platform **1**. (*Bos* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figures 1, 2). The Examiner finds that *Bos* discloses the predetermined position of the platform **1** being based on the vertical position of the gyro **10** relative to the spin axis directed normal to the earth's surface. (*Id*. at c.1, ll.25-29).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 3 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(3) *supra*). The Examiner construes a 'control system…' as a

digital or analog generic control system.

In this light, the Examiner finds that *Bos* discloses the stabilization system including servo amplifiers **14**, **15** and control circuits **24**, **25** that provides stabilization about each of the motorized axis shafts **4**, **5** of the platform **1**. (*Bos* at c.2, ll.32-36, 52-68; see Figure 1).

h. wherein the second sensor package is fixed to the payload platform, and

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses a platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1). The Examiner finds that *Bos* discloses a gyroscope housing **11** including synchros **12**, **13** (*i.e.*, horizontal level sensors) with the gyroscope housing being mounted on the platform **1**. (*Id.* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figure 1). Since the gyroscope housing **11** is specifically mounted on and in direct contact with the platform **1**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **11**, therefore, is rigidly fixed to the platform **1** that forms the three dimensional structure on which a payload is attached. In addition, the Examiner finds that accelerometers **21**, **22** are also mounted on the platform **1**. (*Id.*)

Thus, the Examiner concludes that the gyroscope housing **11**, including synchros **12**, **13**, and accelerometers **21**, **22** are fixed to the platform **1**.

i. the first sensor package is fixed with respect to the base.

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses a gimbal frame **3** being fixed parallel to the deck of the ship. (*Bos* at c.2, ll.45-46; see Figure 1) Similarly, the Examiner finds that *Bos* discloses the synchro transmitters **41**, **42** of gyro stabilization system **26** that sense the position relative to horizontal axis **4**, **5** of the gimbal frame **3** being fixed to the ship. (*Id.* at c.1, l.63 – c.2, l.9; c.3, ll.3-17; c.4, ll.4-13; see Figure 1). Thus, the Examiner concludes that *Bos* sufficiently discloses the synchro transmitters **41**, **42** of gyro stabilization system **26** being fixed respect to the gimbal frame **3** of the stabilization system.

With respect to the limitations of claim 3, *Bos* discloses

wherein the second sensor package includes two level sensors for sensing a position of the payload platform in two perpendicular directions.

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition, the Examiner finds that the '662 Patent discloses the second sensor package being one or more motions sensors with the sensors preferably being level sensors. ('662 Patent at c.4, ll.40-43).

In this light, the Examiner finds that *Bos* discloses the platform **1** having the vertical gyro **10** within the gyroscope housing **11** including synchros **12**, **13** (*i.e.*, horizontal level sensors) to provide voltage information relative to horizontal 'levelness' of the platform **1**. (*Bos* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figures 1, 2). The Examiner finds that *Bos* also discloses the two accelerometers **21**, **22** providing information to indicate the horizontal status of the platform **1**.

The Examiner finds that *Bos* discloses the synchros **12**, **13** (*i.e.*, level sensors) and accelerometers **21**, **22** being orthogonal to each other. (*Id.*; see Figure 1).

With respect to the limitations of claim 4, *Bos* discloses

wherein the second sensor package is mounted on the payload platform

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses a platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1). The Examiner finds that *Bos* discloses a gyroscope housing **11** including synchros **12**, **13** (*i.e.*, horizontal level sensors) with the gyroscope housing being mounted on the platform **1**. (*Id.* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figure 1). Since the gyroscope housing **11** is specifically mounted on and in direct contact with the platform **1**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **11**, therefore, is mounted on the platform **1** that forms the three dimensional structure on which a payload is attached. In addition, the Examiner finds that accelerometers **21**, **22** are also mounted on the platform **1**. (*Id.*)

Thus, the Examiner concludes that the gyroscope housing **11**, including synchros **12**, **13**, and accelerometers **21**, **22** are mounted on the platform **3**.

With respect to the limitations of claim 14, *Bos* discloses

a. [a] method of stabilizing and self correcting a camera platform comprising:

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses a platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1). The Examiner finds that *Bos* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying a radar installation on a ship. (*Bos* at Abstract; c.1, ll.5-11; c.1, l.63 – c.2, l.44; see Figure 1).

b. positioning a stabilized camera platform on a moving object;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § VI.A(1) *supra*).

In this light, the Examiner finds that *Bos* discloses the platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1). The Examiner finds that *Bos* discloses a stabilization system including two servo motors **6**, **7** with each having a gear transmission **8**,**9** stabilizing the platform **1** on the ship. (*Bos* at c.2, ll.4-9, 26-39; c.3, ll.12-17; see Figure 1). Since *Bos* discloses the motors being 'servo motors,' the Examiner finds that motors **6**, **7** of *Bos* are known in the art to include and require an 'encoder'

to provide accurate feedback information on the motor velocity.[23] The Examiner finds this motor, motor shaft and inherent encoder configuration as equivalent to the motor, drive shaft and encoder of the '662 patent. The Examiner finds that *Bos* discloses a gimbal frame **3** being fixed parallel to the deck of the ship. (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1)

c. stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package sensing motion of the moving object independent of motion of the payload platform;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses the platform **1** being stabilized by two identical motor units (*i.e.*, motors **6**, **7**; gear transmission **8**, **9**; etc.) based upon data collected by feedback from synchro transmitters **41**, **42** of gyro stabilization system **26** sensing the position relative to horizontal axis **4**, **5** of the gimbal frame **3** fixed parallel to the deck of the ship. (*Bos* at c.1, l.63 – c.2, l.9; c.3, ll.3-17; c.4, ll.4-13; see Figure 1). The Examiner finds that *Bos* discloses the stabilization system including servo amplifiers **14**, **15** and control circuits **24**, **25** that provides stabilization about each of the orthogonally oriented motorized axis shafts **4**, **5** of the platform **1**. (*Bos* at c.2, ll.32-36, 52-68; see Figure 1). The Examiner finds that *Bos* discloses the servo final amplifiers **14**, **15** receiving feedback from the synchro transmitters **41**, **42** of gyro stabilization system **26** to compensate for errors arising in the servo system. (*Id.* at c.3, ll.3-18; see Figure 1).

[23] See ***Mooney et al.*** (U.S. Patent No. 6,124,885) at c.1, ll.58-59; see Figure 1; and ***Howell*** (U.S. Patent No. RE36,341) at c.4, ll.44-45, 57-64.

d. sensing by a second sensor package, which is fixed to the payload platform, a position of the payload platform relative to a predetermined position; and

e. self correcting the position of the payload platform to the predetermined position based on information collected by the second sensor package.

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'second sensor package' as a sensor group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses a platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1). The Examiner finds that *Bos* discloses a gyroscope housing **11** including synchros **12**, **13** (*i.e.*, horizontal level sensors) with the gyroscope housing being mounted on the platform **1**. (*Id.* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figure 1). Since the gyroscope housing **11** is specifically mounted on and in direct contact with the platform **1**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **11**, therefore, is fixed to the platform **1** that forms the three dimensional structure on which a payload is attached. In addition, the Examiner finds that accelerometers **21**, **22** are also fixed to the platform **1**. (*Id.*)

Moreover, the Examiner finds that *Bos* discloses the predetermined position of the platform **1** being based on the vertical position of the gyro **10** relative to the spin axis directed normal to the earth's surface. (*Id.* at c.1, ll.25-29). The Examiner finds that *Bos* discloses the platform **1** having the vertical gyro **10** within the gyroscope housing **11** including synchros **11**, **12** (*i.e.*, horizontal level sensors) to provide voltage information relative to horizontal 'levelness' of the platform **1**. (*Bos* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figures 1, 2). The Examiner

finds that *Bos* also discloses the two accelerometers **21**, **22** providing information to indicate the horizontal status of the platform **1**. The Examiner finds that *Bos* discloses the stabilization system including servo amplifiers **14**, **15** and control circuits **24**, **25** that provides self correcting stabilization about each of the motorized axis shafts **4**, **5** of the platform **1**. (*Bos* at c.2, ll.32-36, 52-68; see Figure 1).

With respect to the limitations of claim 31, *Bos* discloses

a. [a] method of stabilizing and self correcting a camera platform comprising:

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses a platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1). The Examiner finds that *Bos* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying a radar installation on a ship. (*Bos* at Abstract; c.1, ll.5-11; c.1, l.63 – c.2, l.44; see Figure 1).

b. positioning a stabilized camera platform on a moving object;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses the platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1).

The Examiner finds that *Bos* discloses a stabilization system including two servo motors **6**, **7** with each having a gear transmission **8**, **9** stabilizing the platform **1** on the ship. (*Bos* at c.2, ll.4-9, 26-39; c.3, ll.12-17; see Figure 1). Since *Bos* discloses the motors being 'servo motors,' the Examiner finds that motors **6**, **7** of *Bos* are known in the art to include and require an 'encoder' to provide accurate feedback information on the motor velocity.[24] The Examiner finds this motor, motor shaft and inherent encoder configuration as equivalent to the motor, drive shaft and encoder of the '662 patent. The Examiner finds that *Bos* discloses a gimbal frame **3** being fixed parallel to the deck of the ship. (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1)

c. continuously stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package fixed relative to the moving vehicle and sensing motion of the moving vehicle;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses the platform **1** being stabilized by two identical motor units (*i.e.*, motors **6**, **7**; gear transmission **8**, **9**; etc.) based upon data collected by feedback from synchro transmitters **41**, **42** of gyro stabilization system **26** sensing the position relative to horizontal axis **4**, **5** of the gimbal frame **3** fixed parallel to the deck of the ship. (*Bos* at c.1, l.63 – c.2, l.9; c.3, ll.3-17; c.4, ll.4-13; see Figure 1). The Examiner finds that *Bos* discloses the stabilization system including servo amplifiers **14**, **15** and control circuits **24**, **25** that provides stabilization about each of the orthogonally oriented motorized axis shafts **4**, **5** of the

[24] See ***Mooney et al***. (U.S. Patent No. 6,124,885) at c.1, ll.58-59; see Figure 1; and ***Howell*** (U.S. Patent No. RE36,341) at c.4, ll.44-45, 57-64.

platform **1**. (*Bos* at c.2, ll.32-36, 52-68; see Figure 1). The Examiner finds that *Bos* discloses the servo final amplifiers **14**, **15** receiving feedback from the synchro transmitters **41**, **42** of gyro stabilization system **26** to compensate for errors arising in the servo system. (*Id.* at c.3, ll.3-18; see Figure 1).

d. periodically self correcting a position of the payload platform based on information collected by a second sensor package including a level sensor and mounted on the platform.

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'second sensor package' as a sensor group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses a platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1). The Examiner finds that *Bos* discloses a gyroscope housing **11** including synchros **12**, **13** (*i.e.*, horizontal level sensors) with the gyroscope housing being mounted on the platform **1**. (*Id.* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figure 1). Since the gyroscope housing **11** is specifically mounted on and in direct contact with the platform **1**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **11**, therefore, is fixed to the platform **1** that forms the three dimensional structure on which a payload is attached. In addition, the Examiner finds that accelerometers **21**, **22** are also fixed to the platform **1**. (*Id.*)

Moreover, the Examiner finds that *Bos* discloses the predetermined position of the platform **1** being based on the vertical position of the gyro **10** relative to the spin axis directed normal to the earth's surface. (*Id.* at c.1, ll.25-29). The Examiner finds that *Bos* discloses the

platform **1** having the vertical gyro **10** within the gyroscope housing **11** including synchros **12**, **13** (*i.e.*, horizontal level sensors) to provide voltage information relative to horizontal 'levelness' of the platform **1**. (*Bos* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figures 1, 2). The Examiner finds that *Bos* also discloses the two accelerometers **21**, **22** providing information to indicate the horizontal status of the platform **1**. The Examiner finds that *Bos* discloses the stabilization system including servo amplifiers **14**, **15** and control circuits **24**, **25** that provides self correcting stabilization about each of the motorized axis shafts **4**, **5** of the platform **1**. (*Bos* at c.2, ll.32-36, 52-68; see Figure 1).

With respect to the limitations of claim 32, *Bos* discloses

a. [a] stabilized platform comprising:

The Examiner finds that *Bos* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying a radar installation on a ship. (*Bos* at Abstract; c.1, ll.5-11; c.1, l.63 – c.2, l.44; see Figure 1).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses a platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1).

c. a base;

The Examiner finds that *Bos* discloses a gimbal frame **3** being fixed parallel to the deck of the ship. (*Id.*)

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id.*)

In this light, the Examiner finds that *Bos* discloses a stabilization system including two servo motors **6**, **7** with each having a gear transmission **8**, **9**. (*Bos* at c.2, ll.4-9, 26-39; c.3, ll.12-17; see Figure 1). Since *Bos* discloses the motors being 'servo motors,' the Examiner finds that motors **6**, **7** of *Bos* are known in the art to include and require an 'encoder' to provide accurate feedback information on the motor velocity.[25] The Examiner finds this motor, motor shaft and inherent encoder configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

[25] See ***Mooney et al***. (U.S. Patent No. 6,124,885) at c.1, ll.58-59; see Figure 1; and ***Howell*** (U.S. Patent No. RE36,341) at c.4, ll.44-45, 57-64.

In this light, the Examiner finds that *Bos* discloses each orthogonal motors **6**, **7** receiving feedback from synchro transmitters **41**, **42** of gyro stabilization system **26** that sense the position relative to horizontal axis **4**, **5** of the gimbal frame **3** being fixed parallel to the deck of the ship. (*Bos* at c.1, l.63 – c.2, l.9; c.3, ll.3-17; c.4, ll.4-13; see Figure 1).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *Bos* discloses two accelerometers **21**, **22** and a gyroscope housing **11**, having synchro transmitters **12**, **13** therein, to indicate the horizontal status of the platform **1**. (*Bos* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figures 1, 2). The Examiner finds that *Bos* discloses the predetermined position of the platform **1** being based on the vertical position of the gyro **10** relative to the spin axis directed normal to the earth's surface. (*Id*. at c.1, ll.25-29).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 3 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(3) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system.

In this light, the Examiner finds that *Bos* discloses the stabilization system including servo amplifiers **14**, **15** and control circuits **24**, **25** that provides stabilization about each of the motorized axis shafts **4**, **5** of the platform **1**. (*Bos* at c.2, ll.32-36, 52-68; see Figure 1).

h. wherein the second sensor package is fixed to the payload platform, and

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses a platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1). The Examiner finds that *Bos* discloses a gyroscope housing **11** including synchros **12**, **13** (*i.e.*, horizontal level sensors) with the gyroscope housing being mounted on the platform **1**. (*Id.* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figure 1). Since the gyroscope housing **11** is specifically mounted on and in direct contact with the platform **1**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **11**, therefore, is rigidly fixed to the platform **1** that forms the three dimensional structure on which a payload is attached. In addition, the Examiner finds that accelerometers **21**, **22** are also mounted on the platform **1**. (*Id.*)

Thus, the Examiner concludes that the gyroscope housing **11**, including synchros **12**, **13**, and accelerometers **21**, **22** are fixed to the platform **1**.

i. wherein the control system allows a user to set an initial payload platform position and provides self correction of the platform to the initial position.

As set forth *supra*, the Examiner finds that Functional Phrase 4 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(4) *supra*). The Examiner construes a 'control system …' as a digital or analog generic control system. With respect to the limitation of "allow[ing] a user to set an initial payload platform position," the Examiner finds that the '662 Patent discloses the preset position be "with respect to the earth's horizon and a magnetic course heading." ('662 Patent at c.4, ll.58-61).

In this light, the Examier finds that *Bos* discloses the vertical position of the gyro **10** relative to the spin axis being brought and held in a vertical position. (*Bos* at c.2, ll.4-9, 23-26, 45-49). The Examiner finds that *Bos* discloses the predetermined position of the platform **1** being based on the vertical position of the gyro **10** relative to the spin axis directed normal to the earth's surface. (*Id.*) When the vertical position of the gyro **10** is brought into a desired vertical position to the earth's normal axis, the Examiner finds that the platform **1** would be positioned level to the earth's horizon. Thus, in light of the '662 patent's disclosure to setting a preset position to the earth's horizon, the Examiner finds that *Bos* discloses the stabilization system allowing a user to set an initial payload platform position.

Moreover, the Examiner finds that *Bos* discloses the predetermined position of the platform **1** being based on the vertical position of the gyro **10** relative to the spin axis directed normal to the earth's surface. (*Id.*) The Examiner finds that *Tijsma* discloses the platform **1** having a vertical gyro **10** within a gyroscope housing **11** including synchros **12**, **13** (*i.e.*, horizontal level sensors) to provide information relative to horizontal 'levelness' of the platform **3**. (*Bos* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figures 1, 2). The Examiner finds that *Bos* also discloses the two accelerometers **21**, **22** providing information to indicate the horizontal status of

the platform **1**. The Examiner finds that *Bos* discloses the stabilization system including servo amplifiers **14**, **15** and control circuits **24**, **25** that provides self correcting stabilization about each of the motorized axis shafts **4**, **5** of the platform **1**. (*Bos* at c.2, ll.32-36, 52-68; see Figure 1).

With respect to the limitations of claim 35, *Bos* discloses

a. [a] stabilized platform comprising:

The Examiner finds that *Bos* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying a radar installation on a ship. (*Bos* at Abstract; c.1, ll.5-11; c.1, l.63 – c.2, l.44; see Figure 1).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses a platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1).

c. a base;

The Examiner finds that *Bos* discloses a gimbal frame **3** being fixed parallel to the deck of the ship. (*Id.*)

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id.*)

In this light, the Examiner finds that *Bos* discloses a stabilization system including two servo motors **6**, **7** with each having a gear transmission **8**, **9**. (*Bos* at c.2, ll.4-9, 26-39; c.3, ll.12-17; see Figure 1). Since *Bos* discloses the motors being 'servo motors,' the Examiner finds that motors **6**, **7** of *Bos* are known in the art to include and require an 'encoder' to provide accurate feedback information on the motor velocity.[26] The Examiner finds this motor, motor shaft and inherent encoder configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses each orthogonal motors **6**, **7** receiving feedback from synchro transmitters **41**, **42** of gyro stabilization system **26** that sense the position relative to horizontal axis **4**, **5** of the gimbal frame **3** being fixed parallel to the deck of the ship.

[26] See ***Mooney et al***. (U.S. Patent No. 6,124,885) at c.1, ll.58-59; see Figure 1; and ***Howell*** (U.S. Patent No. RE36,341) at c.4, ll.44-45, 57-64.

(*Bos* at c.1, l.63 – c.2, l.9; c.3, ll.3-17; c.4, ll.4-13; see Figure 1).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *Bos* discloses two accelerometers **21**, **22** and a gyroscope housing **11**, having synchro transmitters **12**, **13** therein, to indicate the horizontal status of the platform **1**. (*Bos* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figures 1, 2). The Examiner finds that *Bos* discloses the predetermined position of the platform **1** being based on the vertical position of the gyro **10** relative to the spin axis directed normal to the earth's surface. (*Id*. at c.1, ll.25-29).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 3 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(3) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system.

In this light, the Examiner finds that *Bos* discloses the stabilization system including servo amplifiers **14**, **15** and control circuits **24**, **25** that provides stabilization about each of the motorized axis shafts **4**, **5** of the platform **1**. (*Bos* at c.2, ll.32-36, 52-68; see Figure 1).

h. wherein the second sensor package is fixed to the payload platform, and

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Bos* discloses a platform **1** forming 'a three dimensional structure on which a payload is attached.' (*Bos* at c.1, l.63 – c.2, l.9; see Figure 1). The Examiner finds that *Bos* discloses a gyroscope housing **11** including synchros **12**, **13** (*i.e.*, horizontal level sensors) with the gyroscope housing being mounted on the platform **1**. (*Id.* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figure 1). Since the gyroscope housing **11** is specifically mounted on and in direct contact with the platform **1**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **11**, therefore, is rigidly fixed to the platform **1** that forms the three dimensional structure on which a payload is attached. In addition, the Examiner finds that accelerometers **21**, **22** are also mounted on the platform **1**. (*Id.*)

Thus, the Examiner concludes that the gyroscope housing **11**, including synchros **12**, **13**, and accelerometers **21**, **22** are fixed to the platform **1**.

i. wherein the first sensor package comprises sensors for sensing a different type of information from the sensor means in the second sensor package.

As set forth *supra*, the Examiner construes a 'first/second sensor package' as a first and second group of sensor elements. (See § VI.E.(1) *supra*).). In addition and as set forth above, the

Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *Bos* discloses the synchro transmitters **41**, **42** of gyro stabilization system **26** that sense the position relative to horizontal axis **4**, **5** of the gimbal frame **3** being fixed parallel to the deck of the ship. (*Bos* at c.1, l.63 – c.2, l.9; c.3, ll.3-17; c.4, ll.4-13; see Figure 1). The Examiner finds that *Bos* discloses each respective synchro transmitters **41**, **42** of gyro stabilization system **26** being horizontal level sensors providing voltage information relative to horizontal 'levelness' of the platform **3**. (*Bos* at c.2, ll.23-36). In addition, the Examiner finds that *Bos* discloses the platform **1** having accelerometers **21**, **22** to provide voltage information relative to horizontal 'levelness' of the platform **1**. (*Bos* at c.2, ll.56-60; c.4, ll.34-41). Thus, the Examiner finds that 'voltage' sensed by the synchro transmitters **41**, **42** of gyro stabilization system **26** as being different from the 'voltage' sensed by the accelerometers **21**, **22**.

(2) Claim 38 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over ***Bos*** in view of ***West, Wessling*** and ***Hartmann***.

With respect to the limitations of claim 38, the Examiner finds that *Bos* discloses all the limitation as set forth above. (See § VII.D.(1) *supra*.). With respect to the limitation(s) of:

> **wherein the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package**

As set forth *supra*, the Examiner finds that Functional Phrase 5 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(5) *supra*). The Examiner construes a 'control system…' as a

digital or analog generic control system. As set forth *supra*, the Examiner construes a 'first/second sensor package' as a first and second group of sensor elements. (See § V.E.(1) *supra*).

While *Bos* discloses all the limitations as set forth above, *Bos* is silent to the control system responding to information from the first sensor package more often than the control system responds to information from the second sensor package.

However, a stabilization platform comprising a control system that responds to information from the first sensor package more often than the control system responds to information from the second sensor package is known in the art. The Examiner finds that *West*, for example, teaches an instrument positioning system (IPS) utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**. (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8** and GP **18** to provide a first fast control loop (*i.e.*, 25 Hz). (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the OSP **24**/ADF to provide a second slow control loop (*i.e.*, 1 Hz). In addition, the Examiner finds that both *Wessling* and *Hartmann* teaches the same instrument pointing system (IPS) and control system thereof as disclosed in *West*. (See *Wessling* at § Data Electronics Assembly; and *Hartmann* at pp.17-3, § (2), ¶ 3; § (2.1), ¶ 1).

The Examiner finds that that it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the stabilization platform including a control system that responds to information from the first sensor package more often than the control system responds to information from the second sensor package as described in *West*, *Wessling*

and *Hartmann* in the stabilized platform of *Bos*.

A person of ordinary skill in the art would be motivated to incorporate the control system responding to information from the first sensor package more often than the control system responding to information from the second sensor package, since it provides a mechanism to compensate for attitude updates and system drift estimates. (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3, 11). In other words, such a modification would have provided a stabilized platform that increases the sensitivity and accuracy of the stabilized platform capabilities, thereby increasing the operational efficiency of the stabilized platform and method.

E. Issue 5 (Based on SNQ 4 – Vaassen)

(1) Claim(s) 1, 3, 4, 14, 31, 32 and 35 are rejected under pre-AIA 35 U.S.C. 102(a) and (e) as anticipated by ***Vaassen*.**

With respect to the limitations of claim 1, *Vaassen* discloses

a. **[a] stabilized platform comprising:**

The Examiner finds that *Vaassen* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying an optical search sensor on a ship. (*Vaassen* at Abstract; p.1, ll.1-12;p.4, l.9 – p.5, l.17 see Figures 1A, 1B).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23).

c. a base;

The Examiner finds that *Vaassen* discloses a yoke-shaped substructure **3** being connected to the deck of the ship. (*Id.* at p.4, ll.9-19; see Figures 1A, 1B).

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id.*)

In this light, the Examiner finds that *Vaassen* discloses a stabilization system including two servo motors **9** with each having a gear transmission **10**. (*Vaassen* at p.4, ll.23-30; see Figure 1A). In addition, the Examiner finds that *Vaassen* discloses servo motors **9** having shafts **6**, **7** with angle sensors/encoders **11** to provide feedback to control the servo motors **9**. (*Id.* at p.4, ll.23-35; see Figure 1A). The Examiner finds this motor, motor shaft and encoder configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor

elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a ship's centrally situated system of gyroscopes **12** sensing the ships roll, pitch and yaw. (*Vaassen* at p.4, ll.30-35).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *Vaassen* discloses two encoders **16**, **17**, being gyrochips or conventional gyro systems, to indicate the pitch and roll status of the platform **8**. (*Vaassen* at p.5, ll.6-17; see Figures 1A, 1B). The Examiner finds that *Vaassen* discloses the predetermined position of the platform **8** being based on the north-horizontal coordinate system of the earth's surface. (*Id.* at p.1, ll.20-23; p.4, ll.30-35).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 3 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(3) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system.

In this light, the Examiner finds that *Vaassen* discloses the stabilization system including servo control unit **2** that provides stabilization about each of the motorized axis shafts **6**, **7** of the platform **8**. (*Vaassen* at p.4, l.30 – p.5, l.17; p.6, l.28 – p.7, l.5; see Figure 1A).

h. wherein the second sensor package is fixed to the payload platform, and

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23). The Examiner finds that *Vaassen* discloses the two encoders **16**, **17**, being gyrochips or conventional gyro systems, being fixed to the platform **8**. (*Id.* at p.5, ll.6-8; see Figures 1A, 1b; emphasis on Figure 1B). Since the two encoders **16**, **17** are specifically mounted on and in direct contact with the platform **8**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the two encoders **16**, **17**, therefore, are rigidly fixed to the platform **8** that forms the three dimensional structure on which a payload is attached. (*Id.*)

Thus, the Examiner concludes that the two encoders **16**, **17** are fixed to the platform **8**.

i. the first sensor package is fixed with respect to the base.

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses the yoke-shaped substructure **3** being connected to the deck of the ship. (*Vaassen* at p.4, ll.9-19; see Figures 1A, 1B). Similarly, the Examiner finds that *Vaassen* discloses the centrally situated system of gyroscopes **12** sensing the ships roll, pitch and yaw being fixed to the ship. (*Id.* at p.2, ll.28-31; p.4, ll.30-35). Thus, the Examiner concludes that *Vaassen* sufficiently discloses the centrally situated system of gyroscopes **12** being fixed respect to the yoke-shaped substructure **3** of the stabilization system.

With respect to the limitations of claim 3, *Vaassen* discloses

wherein the second sensor package includes two level sensors for sensing a position of the payload platform in two perpendicular directions.

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition, the Examiner finds that the '662 Patent discloses the second sensor package being one or more motions sensors with the sensors preferably being level sensors. ('662 Patent at c.4, ll.40-43).

In this light, the Examiner finds that *Vaassen* discloses the gyrochips or conventional gyro systems encoders **16**, **17** indicting the pitch and roll status of the platform **8** relative to the north-horizontal coordinate system of the earth's surface. (*Vaassen* at p.4, ll.30-35; p.5, ll.6-17; see Figures 1A, 1B). The Examiner finds that *Vaassen* discloses the gyrochips or conventional gyro systems encoders **16**, **17** being orthogonal to each other. (*Id.*; see Figure 1A).

With respect to the limitations of claim 4, *Vaassen* discloses

wherein the second sensor package is mounted on the payload platform

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform,"

The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23). The Examiner finds that *Vaassen* discloses the two gyrochips or conventional gyro systems encoders **16**, **17** being mounted on the platform **8**. (*Id.* at p.5, ll.6-8; see Figures 1A, 1b; emphasis on Figure 1B). Since the two encoders **16**, **17** are specifically mounted on and in direct contact with the platform **8**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the two encoders **16**, **17**, therefore, are mounted on the platform **8** that forms the three dimensional structure on which a payload is attached. (*Id.*)

Thus, the Examiner concludes that the two encoders **16**, **17** are mounted on the platform **8**.

With respect to the limitations of claim 14, *Vaassen* discloses

a. [a] method of stabilizing and self correcting a camera platform comprising:

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23; see Figure 1A). The Examiner finds that *Vaassen* discloses a two-axis stabilized system that was

developed for stabilization of a platform carrying an optical search sensor on a ship. (*Vaassen* at Abstract; p.1, ll.1-12; p.4, l.9 – p.5, l.17 see Figures 1A, 1B).

b. positioning a stabilized camera platform on a moving object;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23; see Figure 1A). The Examiner finds that *Vaassen* discloses a stabilization system including two servo motors **9** with each having a gear transmission **10**. (*Id.* at p.4, ll.23-30; see Figure 1A). In addition, the Examiner finds that *Vaassen* discloses servo motors **9** having shafts **6**, **7** with angle sensors/encoders **11** to provide feedback to control the servo motors **9**. (*Id.* at p.4, ll.23-35; see Figure 1A). The Examiner finds this motor, motor shaft and encoder configuration as equivalent to the motor, drive shaft and encoder of the '662 patent. The Examiner finds that *Vaassen* discloses a yoke-shaped substructure **3** being connected to the deck of the ship. (*Id.* at p.4, ll.9-19; see Figures 1A, 1B).

c. stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package sensing motion of the moving object independent of motion of the payload platform;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'first

sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses the platform **8** being stabilized by two identical motor units (*i.e.*, motors **9**; gear transmission **10,** etc.) based upon data collected by feedback from a ship's centrally situated system of gyroscopes **12** sensing the ships roll, pitch and yaw. (*Vaassen* at p.4, ll.30-35). The Examiner finds that *Vaassen* discloses the stabilization system including servo control unit **2** that provides stabilization about each of the orthogonally oriented motorized axis shafts **6**, **8** of the platform **8**. (*Id.* at p.4, ll.30-35). The Examiner finds that *Vaassen* discloses the servo control unit **2** receiving feedback from the centrally situated system of gyroscopes **12** to compensate for errors arising in the servo system. (*Id.*)

d. sensing by a second sensor package, which is fixed to the payload platform, a position of the payload platform relative to a predetermined position; and

e. self correcting the position of the payload platform to the predetermined position based on information collected by the second sensor package.

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'second sensor package' as a sensor group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses the platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23; see Figure 1A). The Examiner finds that *Vaassen* discloses the gyrochips or conventional gyro systems encoders **16**, **17** being fixed to the platform **8**. (*Id.* at p.5, ll.6-8; see Figures 1A, 1b; emphasis on Figure 1B). Since the two encoders **16**, **17** are specifically mounted on and in direct contact with the platform **8**, that forms the three dimensional structure on which a payload is

attached, the Examiner finds that the two encoders **16**, **17**, therefore, are rigidly fixed to the platform **8** that forms the three dimensional structure on which a payload is attached. (*Id.*)

Moreover, the Examiner finds that *Vaassen* discloses the predetermined position of the platform **8** being based on the north-horizontal coordinate system of the earth's surface. (*Id.* at p.1, ll.20-23; p.4, ll.30-35; p.5, ll.6-17; see Figures 1A, 1B). The Examiner finds that *Vaassen* discloses the gyrochips or conventional gyro systems encoders **16**, **17** indicating the pitch and roll status of the platform **8**. (*Id.* at p.5, ll.6-17; see Figures 1A, 1B). The Examiner finds that *Vaassen* discloses the servo control unit **2** of the stabilization system providing self correcting stabilization about each of the motorized axis shafts **6**, **7** of the platform **8** relative to the north-horizontal coordinate system of the earth's surface to provide a desired, usually horizontal, position. (*Id.* at p.1, ll.20-23; p.4, l.30 – p.5, l.17; p.6, l.28 – p.7, l.5; see Figure 1A).

With respect to the limitations of claim 31, *Vaassen* discloses

a. **[a] method of stabilizing and self correcting a camera platform comprising:**

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23; see Figure 1A). The Examiner finds that *Vaassen* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying an optical search sensor on a ship. (*Vaassen* at Abstract; p.1, ll.1-12;p.4, l.9 – p.5, l.17 see Figures 1A, 1B).

b. positioning a stabilized camera platform on a moving object;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23; see Figure 1A). The Examiner finds that *Vaassen* discloses a stabilization system including two servo motors **9** with each having a gear transmission **10**. (*Id.* at p.4, ll.23-30; see Figure 1A). In addition, the Examiner finds that *Vaassen* discloses servo motors **9** having shafts **6**, **7** with angle sensors/encoders **11** to provide feedback to control the servo motors **9**. (*Id.* at p.4, ll.23-35; see Figure 1A). The Examiner finds this motor, motor shaft and encoder configuration as equivalent to the motor, drive shaft and encoder of the '662 patent. The Examiner finds that *Vaassen* discloses a yoke-shaped substructure **3** being connected to the deck of the ship. (*Id.* at p.4, ll.9-19; see Figures 1A, 1B).

c. continuously stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package fixed relative to the moving vehicle and sensing motion of the moving vehicle

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses the platform **8** being stabilized by two identical motor units (*i.e.*, motors **9**; gear transmission **10,** etc.) based upon data collected by

feedback from a ship's centrally situated system of gyroscopes **12** sensing the ships roll, pitch and yaw. (*Vaassen* at p.4, ll.30-35). The Examiner finds that *Vaassen* discloses the stabilization system including servo control unit **2** that provides stabilization about each of the orthogonally oriented motorized axis shafts **6**, **8** of the platform **8** relative to the yoke-shaped substructure **3** fixed to the deck of the ship. (*Id.* at p.4, ll. 9-19, 30-35). The Examiner finds that *Vaassen* discloses the servo control unit **2** receiving feedback from the centrally situated system of gyroscopes **12** to compensate for errors arising in the servo system. (*Id.*)

d. periodically self correcting a position of the payload platform based on information collected by a second sensor package including a level sensor and mounted on the platform.

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*). In addition, as set forth *supra*, the Examiner construes a 'second sensor package' as a sensor group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses the platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23; see Figure 1A). The Examiner finds that *Vaassen* discloses the gyrochips or conventional gyro systems encoders **16**, **17** being mounted on the platform **8**. (*Id.* at p.5, ll.6-8; see Figures 1A, 1B; emphasis on Figure 1B). Since the two encoders **16**, **17** are specifically mounted on and in direct contact with the platform **8**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the two encoders **16**, **17**, therefore, are mounted on the platform **8** that forms the three dimensional structure on which a payload is attached. (*Id.*)

Moreover, the Examiner finds that *Vaassen* discloses the predetermined position of the platform **8** being based on the north-horizontal coordinate system of the earth's surface. (*Id*. at p.1, ll.20-23; p.4, ll.30-35; p.5, ll.6-17; see Figures 1A, 1B). The Examiner finds that *Vaassen* discloses the gyrochips or conventional gyro systems encoders **16**, **17** indicating the pitch and roll status of the platform **8**. (*Id*. at p.5, ll.6-17; see Figures 1A, 1B). The Examiner finds that *Vaassen* discloses the servo control unit **2** of the stabilization system providing self correcting stabilization about each of the motorized axis shafts **6**, **7** of the platform **8** relative to the north-horizontal coordinate system of the earth's surface to provide a desired, usually horizontal, position.. (*Id*. at p.1, ll.20-23; p.4, l.30 – p.5, l.17; p.6, l.28 – p.7, l.5; see Figure 1A).

With respect to the limitations of claim 32, *Vaassen* discloses

a. [a] stabilized platform comprising:

The Examiner finds that *Vaassen* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying an optical search sensor on a ship. (*Vaassen* at Abstract; p.1, ll.1-12;p.4, l.9 – p.5, l.17 see Figures 1A, 1B).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23).

c. a base;

The Examiner finds that *Vaassen* discloses a yoke-shaped substructure **3** being connected to the deck of the ship. (*Id*. at p.4, ll.9-19; see Figures 1A, 1B).

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id*.)

In this light, the Examiner finds that *Vaassen* discloses a stabilization system including two servo motors **9** with each having a gear transmission **10**. (*Vaassen* at p.4, ll.23-30; see Figure 1A). In addition, the Examiner finds that *Vaassen* discloses servo motors **9** having shafts **6**, **7** with angle sensors/encoders **11** to provide feedback to control the servo motors **9**. (*Id*. at p.4, ll.23-35; see Figure 1A). The Examiner finds this motor, motor shaft and encoder configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a ship's centrally situated system of gyroscopes **12** sensing the ships roll, pitch and yaw. (*Vaassen* at p.4, ll.30-35).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *Vaassen* discloses two encoders **16**, **17**, being gyrochips or conventional gyro systems, to indicate the pitch and roll status of the platform **8**. (*Vaassen* at p.5, ll.6-17; see Figures 1A, 1B). The Examiner finds that *Vaassen* discloses the predetermined position of the platform **8** being based on the north-horizontal coordinate system of the earth's surface. (*Id*. at p.1, ll.20-23; p.4, ll.30-35).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 3 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(3) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system.

In this light, the Examiner finds that *Vaassen* discloses the stabilization system including servo control unit **2** that provides stabilization about each of the motorized axis shafts **6**, **7** of the platform **8**. (*Vaassen* at p.4, l.30 – p.5, l.17; p.6, l.28 – p.7, l.5; see Figure 1A).

h. wherein the second sensor package is fixed to the payload platform, and

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23). The Examiner finds that *Vaassen* discloses the two encoders **16**, **17**, being gyrochips or conventional gyro systems, being fixed to the platform **8**. (*Id.* at p.5, ll.6-8; see Figures 1A, 1b; emphasis on Figure 1B). Since the two encoders **16**, **17** are specifically mounted on and in direct contact with the platform **8**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the two encoders **16**, **17**, therefore, are rigidly fixed to the platform **8** that forms the three dimensional structure on which a payload is attached. (*Id.*)

Thus, the Examiner concludes that the two encoders **16**, **17** are fixed to the platform **8**.

i. wherein the control system allows a user to set an initial payload platform position and provides self correction of the platform to the initial position.

As set forth *supra*, the Examiner finds that Functional Phrase 4 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(4) *supra*). The Examiner construes a 'control system …' as a digital or analog generic control system. With respect to the limitation of "allow[ing] a user to set an initial payload platform position," the Examiner finds that the '662 Patent discloses the preset position be "with respect to the earth's horizon and a magnetic course heading." ('662 Patent at c.4, ll.58-61).

In this light, the Examiner finds that *Vaassen* discloses two gyrochips or conventional gyro systems encoders **16**, **17** indicating the pitch and roll status of the platform **8**. (*Vaassen* at p.5, ll.6-17; see Figures 1A, 1B). The Examiner finds that *Vaassen* discloses the predetermined position of the platform **8** being based on the north-horizontal coordinate system of the earth's surface. (*Id.* at p.1, ll.20-23; p.4, ll.30-35). When the two gyrochips or conventional gyro systems encoders **16**, **17** indicate the pitch and roll status of the platform **8** being approximately zero (*i.e.*, a desired, usually horizontal, position), the Examiner finds that the platform **8** would be positioned level to the earth's horizon. Thus, in light of the '662 patent's disclosure to setting a preset position to the earth's horizon, the Examiner finds that *Vaassen* discloses the stabilization system allowing a user to set an initial payload platform position.

Moreover, the Examiner finds that *Vaassen* discloses the predetermined position of the platform **8** being based on the north-horizontal coordinate system of the earth's surface. (*Id.* at p.1, ll.20-23; p.4, ll.30-35; p.5, ll.6-17; see Figures 1A, 1B). The Examiner finds that *Vaassen* discloses the gyrochips or conventional gyro systems encoders **16**, **17** indicating the pitch and roll status of the platform **8**. (*Id.* at p.5, ll.6-17; see Figures 1A, 1B). The Examiner finds that *Vaassen* discloses the servo control unit **2** of the stabilization system providing self correcting stabilization about each of the motorized axis shafts **6**, **7** of the platform **8** relative to the north-horizontal coordinate system of the earth's surface to provide a desired, usually horizontal, position. (*Id.* at p.1, ll.20-23; p.4, l.30 – p.5, l.17; p.6, l.28 – p.7, l.5; see Figure 1A).

With respect to the limitations of claim 35, *Vaassen* discloses

a. **[a] stabilized platform comprising:**

The Examiner finds that *Vaassen* discloses a two-axis stabilized system that was developed for stabilization of a platform carrying an optical search sensor on a ship. (*Vaassen* at Abstract; p.1, ll.1-12;p.4, l.9 – p.5, l.17 see Figures 1A, 1B).

b. a payload platform for supporting an article to be stabilized;

As set forth above, *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23).

c. a base;

The Examiner finds that *Vaassen* discloses a yoke-shaped substructure **3** being connected to the deck of the ship. (*Id.* at p.4, ll.9-19; see Figures 1A, 1B).

d. a stabilizing system connected between the payload platform and the base, the stabilizing system including means for moving the payload platform with respect to the base about two different axes for providing the payload platform with stabilization in two dimensions;

As set forth *supra*, the Examiner finds that Functional Phrase 1 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(1) *supra*). The Examiner construes a 'means for moving…' as two independent orthogonally mounted drive mechanisms with each including a motor, drive shaft and encoder. (*Id.*)

In this light, the Examiner finds that *Vaassen* discloses a stabilization system including two servo motors **9** with each having a gear transmission **10**. (*Vaassen* at p.4, ll.23-30; see Figure

1A). In addition, the Examiner finds that *Vaassen* discloses servo motors **9** having shafts **6**, **7** with angle sensors/encoders **11** to provide feedback to control the servo motors **9**. (*Id*. at p.4, ll.23-35; see Figure 1A). The Examiner finds this motor, motor shaft and encoder configuration as equivalent to the motor, drive shaft and encoder of the '662 patent.

e. a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted;

As set forth *supra*, the Examiner construes a 'first sensor package' as a first group of sensor elements. (See § V.E.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a ship's centrally situated system of gyroscopes **12** sensing the ships roll, pitch and yaw angles (*i.e.*, positions). (*Vaassen* at p.4, ll.30-35).

f. a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

The Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *Vaassen* discloses two encoders **16**, **17**, being gyrochips or conventional gyro systems, to indicate the pitch and roll status of the platform **8**. (*Vaassen* at p.5, ll.6-17; see Figures 1A, 1B). The Examiner finds that *Vaassen* discloses the predetermined position of the platform **8** being based on the north-horizontal coordinate system of the earth's surface. (*Id*. at p.1, ll.20-23; p.4, ll.30-35).

g. a control system connected to the means for moving for stabilizing the platform in response to information provided by the first sensor package and the second sensor package,

As set forth *supra*, the Examiner finds that Functional Phrase 3 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(3) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system.

In this light, the Examiner finds that *Vaassen* discloses the stabilization system including servo control unit **2** that provides stabilization about each of the motorized axis shafts **6**, **7** of the platform **8**. (*Vaassen* at p.4, l.30 – p.5, l.17; p.6, l.28 – p.7, l.5; see Figure 1A).

h. wherein the second sensor package is fixed to the payload platform, and

As set forth *supra*, the Examiner construes a 'second sensor package' as a second group of sensor elements. (See § V.E.(1) *supra*). With respect to the limitation of "payload platform," The Examiner finds that *Grober v Mako* construed "payload platform" to mean "a three dimensional structure upon which the payload (e.g., a camera) is directly mounted upon or affixed to." (See § V.B.(1) *supra*).

In this light, the Examiner finds that *Vaassen* discloses a platform **8** forming 'a three dimensional structure on which a payload is attached.' (*Vaassen* at Abstract; p.45, ll.19-23). The Examiner finds that *Vaassen* discloses the two encoders **16**, **17**, being gyrochips or conventional gyro systems, being fixed to the platform **8**. (*Id.* at p.5, ll.6-8; see Figures 1A, 1b; emphasis on Figure 1B). Since the two encoders **16**, **17** are specifically mounted on and in direct contact with the platform **8**, that forms the three dimensional structure on which a payload is attached, the

Examiner finds that the two encoders **16**, **17**, therefore, are rigidly fixed to the platform **8** that forms the three dimensional structure on which a payload is attached. (*Id.*)

Thus, the Examiner concludes that the two encoders **16**, **17** are fixed to the platform **8**.

i. wherein the first sensor package comprises sensors for sensing a different type of information from the sensor means in the second sensor package.

As set forth *supra*, the Examiner construes a 'first/second sensor package' as a first and second group of sensor elements. (See § V.E.(1) *supra*). In addition and as set forth above, the Examiner finds that Functional Phrase 2 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.C.(2) *supra*). The Examiner construes a 'sensor means for sensing…' as one or more motion or level sensors.

In this light, the Examiner finds that *Vaassen* discloses a ship's centrally situated system of gyroscopes **12** sensing the ships roll, pitch and yaw angles (*i.e.*, positions). (*Vaassen* at p.4, ll.30-35). The Examiner finds that *Vaassen* discloses the two gyrochips or conventional gyro systems encoders **16**, **17** sensing pitch and roll angle velocity. (*Id.* at p.5, ll.4-17). Thus, the Examiner finds that 'angles' sensed by the centrally situated system of gyroscopes **12** as being different from the 'angle velocity sensed by the two gyrochips or conventional gyro systems encoders **16**, **17**.

(2) Claim 38 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over ***Vaassen*** in view of ***West***, ***Wessling*** and ***Hartmann***.

With respect to the limitations of claim 38, the Examiner finds that *Vaassen* discloses all the limitation as set forth above. (See § VII.E.(1) *supra*.). With respect to the limitation(s) of:

wherein the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package

As set forth *supra*, the Examiner finds that Functional Phrase 5 does invoke 35 U.S.C. §112, 6th paragraph. (See § V.D.(5) *supra*). The Examiner construes a 'control system…' as a digital or analog generic control system. As set forth *supra*, the Examiner construes a 'first/second sensor package' as a first and second group of sensor elements. (See § V.E.(1) *supra*).

While *Vaassen* discloses all the limitations as set forth above, *Vaassen* is silent to the control system responding to information from the first sensor package more often than the control system responds to information from the second sensor package.

However, a stabilization platform comprising a control system that responds to information from the first sensor package more often than the control system responds to information from the second sensor package is known in the art. The Examiner finds that *West*, for example, teaches an instrument positioning system (IPS) utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**. (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8** and GP **18** to provide a first fast control loop (*i.e.*, 25 Hz). (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the OSP **24**/ADF to provide a second slow control loop (*i.e.*, 1 Hz). In addition, the Examiner finds that both *Wessling* and *Hartmann* teaches the same instrument pointing system (IPS) and control system thereof as disclosed in *West*. (See *Wessling* at § Data Electronics Assembly; and *Hartmann* at pp.17-3, § (2), ¶ 3; § (2.1), ¶ 1).

The Examiner finds that that it would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the stabilization platform including a control system that responds to information from the first sensor package more often than the control system responds to information from the second sensor package as described in *West*, *Wessling* and *Hartmann* in the stabilized platform of *Vaassen*.

A person of ordinary skill in the art would be motivated to incorporate the control system responding to information from the first sensor package more often than the control system responding to information from the second sensor package, since it provides a mechanism to compensate for attitude updates and system drift estimates. (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3, 11). In other words, such a modification would have provided a stabilized platform that increases the sensitivity and accuracy of the stabilized platform capabilities, thereby increasing the operational efficiency of the stabilized platform and method.

VII. Response to Arguments

A. Claim Rejections Under 35 USC §§ 102 and 103

(1) Ground 1: West

a. Claim 1

i. Elements 1a-1d, 1g

The Examiner finds that Owner does not challenge and agrees that *West* discloses elements *1a-1d* and *1g* of claim 1's requirements. (See Mar I 2020 PO Response at 3-4). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing elements *1a-1d* and *1g* of claim 1's requirements to advance prosecution of this patent

reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 1e - a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted

Owner contends that the accelerometer package (ACP) [**8**] does not measure motion because the ACP cannot measure pitch and roll motion of a moving object on which a stabilized platform is mounted. (Mar I 2020 PO Response at 4-5). Specifically, Owner contends that, since the '662 Patent is designed for the pitch and roll of a boat, the accelerometer package (ACP) [**8**] cannot measure the pitch and roll of a boat. (*Id.*) Similarly, Owner contends that vibration motion sensed by the accelerometer package (ACP) [**8**] is the wrong information from the wrong sensor to work the way described in the '662 Patent and, thus, teaches away from the '662 Patent.

The Examiner respectfully disagrees. First, in response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which Owner relies (*i.e.*, *a sensor package must determine pitch and roll motion on a moving boat*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For

example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In addition, "[a] reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments." *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). (See MPEP § 2123). In this light, the Examiner finds that the '662 Patent is not limited to determining motion *only* induced by pitch and roll of a camera *as well as operation thereof on boat at sea.* To support the Examiner's position, the Examiner finds that the '662 Patent discloses "the stabilized platform is stabilized *to compensate for motion caused by* waves, currents, wind and *other motion during land, air and sea operations of a camera*." (662 Patent at Abstract; c.3, ll.7-9; emphasis added). The Examiner finds that the '662 Patent further discloses *"[o]ne example of* a stabilized platform **100** *for use on boats and other vehicles* has the *capability of compensating for pitch and roll motions* of about 70 to about 90 degrees…." (*Id.* at c.5, ll.6-8). While the Examiner acknowledges that the '662 Patent discloses the determination/sensing of pitch and roll motion by a first sensor package on a boat during operation at sea, the Examiner finds that, as set forth *supra*, the disclosed examples of the '662 Patent do not teach away from determining/sensing orthogonal vibrational motion of a shuttle vehicle during operation in air/space, but instead are evidence to the fact that the '662 Patent

contemplated/anticipated an embodiment of determining/sensing other motion in a variety of vehicles in multiple operational environments just as the preferred embodiment of determining/sensing of pitch and roll motion by a first sensor package on a boat during operation at sea. Thus, in view of the teachings of that the '662 Patent, the Examiner concludes that the '662 Patent provides sufficient evidence to the fact that prior art disclosing an embodiment in which other motion, including vibrational motion, is determined from a variety of vehicles in multiple operational environments, *e.g.*, a shuttle operating in air/space, would sufficiently meet the "*first sensor package*" claim requirement.

From this perspective, the Examiner finds that the accelerometer package (ACP) [**8**] of *West* sufficiently meets the "first sensor package" claim requirement in accordance with *Phillips*. To support the Examiner's position, the Examiner finds that *West* discloses the accelerometer package (ACP) [**8**] consisting of three analog force pendulums in an orthogonal configuration for sensing *vibrational motion* of the shuttle, during operation thereof, on which the payload platform (*i.e.*, combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload) is attached.'. (*West* at §§ II.B, ¶ 2; V.A; see Figures 1, 8). The Examiner finds that "vibrational motion" may be classified as other motion that is generated by the shuttle during operation thereof in air/space.

In addition, and with respect to the contention that the accelerometer package (ACP) [**8**] of *West* teaches away from the '662 Patent, the Examiner finds this argument misplaced and moot since the rejection of *West* is anticipatory. To support the Examiner's position, the MPEP states, "[a]rguments that the alleged anticipatory prior art is 'nonanalogous art' or 'teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention,

[are] not 'germane' to a rejection under section 102." *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986) (quoting *In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). (See MPEP § 2131.05). The Examiner concludes that *West* is anticipatory prior art since it explicitly and/or inherently discloses every limitation recited in the claims, as set *supra*. Thus, the argument is deemed moot.

Thus, in view of the teachings of *West*, the Examiner concludes and maintains that *West* sufficiently discloses "a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted."

iii. Element 1f - a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

Owner contends that the "second sensor package is preferably level sensors" as evidenced by claim 3. (Mar I 2020 PO Response at 5). Owner contends that the gyro package (GP) does not sense position as required by the '662 Patent, nor have reference to any to the Earth's horizon or level. (*Id*). Owner contends that, since the OSP is designed for space, one of ordinary skill in the art would not look to or have the motivation to utilize the OSP for stabilizing a camera package on a boat at sea. (*Id*. at 5-6).

The Examiner respectfully disagrees. First, in response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which Owner relies (*i.e.*, *a sensor package being level sensors; and being utilized to stabilize a camera package on a boat at sea*) are not recited in the rejected claim(s). Although the claims

are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Moreover, with respect the second sensor package being required to be level sensors, the Examiner respectfully disagrees. The Examiner finds that the second sensor package is a second group of sensor elements that *comprises* the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2). The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Mars Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004). (MPEP § 2111.03.I). Thus, the Examiner finds that the second sensor package may include other sensors, notwithstanding level sensors, in addition to the FP2.

Furthermore, the Examiner finds that the FP2 is not solely limited to "level sensors." While the *Voice v OCR II* Court construed FP2 to be "one or more level sensors of the second sensor package," the Examiner finds that "[a] reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments." *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). The Examiner finds that the '662 Patent clearly and sufficiently discloses the second sensor package including one or more motion sensors to provide position feedback, *with a preference to level sensors*. ('662 Patent at c.4, ll.40-43). The Examiner finds that the '662 Patent provides "rate sensors, gyroscopic sensors, fiber optic sensors or other sensors" as examples of motion sensors. (*Id.* at c.4, ll.28-29). The Examiner notes that a gyroscope measures the rate of rotation around a particular axis which it is associated with, thus, providing an indication of the orientation/position of the element the gyroscope is affixed thereto. Moreover, the Examiner finds that the '662 Patent provides evidence to the fact that "motion sensors" such as "rate sensors, gyroscopic sensors, fiber optic sensors or other sensors" provide both motion and position feedback. (*Id.* at c.4, ll. 27-30, 40-42). Thus, in view of the teachings of that the '662 Patent, the Examiner concludes that the '662 Patent provides sufficient evidence to the fact that prior art disclosing an embodiment in which a second group of sensor elements includes one or more motion sensor or level sensor, would sufficiently meet the "*second sensor package*" claim requirement.

In this light, and with respect the gyro package (GP), the Examiner finds that the gyro package (GP) [**18**] of *West* sufficiently satisfies the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2). To support the Examiner's position, the Examiner find that *West* discloses a three-axis strap-down inertial

reference unit, gyro package (GP) [**18**], being mounted on the underside of the equipment platform **22** that measures the rate of rotation that results in *delta angle* output. (*West* at §§ II.B, ¶ 3; II.C, ¶¶ 2-4; see Figure 1). The Examiner finds that *West* discloses the rate measurements being transformed from an internal gyro coordinate system to the IPS coordinate system. (*Id.* at § II.C, ¶ 4). The Examiner finds that *West* discloses the "inertial attitude being maintained by the gyros and the attitude calculations performed in the DCU." (*Id.* at § IV, ¶ 1). The Examiner finds that "attitude" is "the position of a craft (such as an aircraft or spacecraft) determined by the relationship between its axes and a reference datum (such as the horizon or a particular star)."[27] Thus, since the rate measurement of the equipment platform **22** is provided by the gyro package (GP) [**18**] and used to maintain the position of attitude of the equipment platform **22**, the Examiner concludes and maintains that the gyro package (GP) [**18**] of *West* sufficiently satisfies the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2).

With respect the (OSP) **24**, Owner concedes that the (OSP) **24** of *West* can be utilized in space to "pick out a star or other cosmic entity." (Mar I 2020 PO Response at 6). However, the Examiner disagrees with Owner that the OSP **24** cannot be utilized in a non-space environment since the (OSP) **24** of *West* sufficiently satisfies the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2). To support the Examiner's position, the Examiner find that *West* discloses the (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on

[27] "*attitude*." Merriam-Webster Online Dictionary. 2015. Merriam-Webster Online. 01 September 2020 <http://www.merriam-webster.com/dictionary/attitude>

Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the OSP **24** providing information to compensate for system drift and attitude errors accumulated during the gyro control. (*Id* at §§ I, ¶ 3; I I.C, ¶ 3, 11; IV, ¶ 1). The Examiner finds that *West* discloses the position/orientation sensing being based on the acquisition, pointing to, and tracking of a variety of astronomical targets, thus, the sensing and providing of positional/orientational information by the GP and OSP is relative to predetermined positions. (*Id*. at §§ II, ¶ 1; A, ¶¶ 1-3). Thus, since the inertial attitude error measurements of the equipment platform **22** are provided by OSP **24** and used to maintain the position of attitude of the equipment platform **22**, the Examiner concludes and maintains that the OSP **24** of *West* sufficiently satisfies the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2).

With respect to the contention that *West* is nonanalogous art (*i.e.*, a person of ordinary skill in the art would never consider an OSP for any purpose to control stabilization of the payload platform (Mar I 2020 PO Response at 6)), the Examiner finds this argument misplaced and moot since the rejection of *West* is anticipatory. To support the Examiner's position, the MPEP states, "[a]rguments that the alleged anticipatory prior art is 'nonanalogous art' or 'teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention, [are] not 'germane' to a rejection under section 102." *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986) (quoting *In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). (See MPEP § 2131.05). The Examiner concludes that *West* is anticipatory prior art since it explicitly and/or inherently discloses every limitation recited in the claims, as set *supra*. Thus, the argument is deemed moot.

iv. Element 1h - wherein the second sensor package is fixed to the payload platform, and

Owner contends that the gyro package (GP) [**18**] and OSP **24** *may well be fixed* to the payload platform, however, they are not the second sensor package. (Mar I 2020 PO Response at 7-8).

The Examiner finds that Owner does not challenge and agrees that *West* discloses the second sensor package being fixed to the platform. (See *Id.* at p.7, l.3). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing the second sensor package being fixed to the platform to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

However, with respect to the gyro package (GP) [**18**] and OSP **24** not being the second sensor package, and thus, not fixed to the platform, the Examiner respectfully disagrees. The Examiner finds this contention (*i.e.*, the gyro package (GP) [**18**] and OSP **24** not being the second sensor package) the same as previously set forth by Owner. (Mar I 2020 PO Response at 5-6). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(1).a.iii).

v. Element 1i - the first sensor package is fixed with respect to the base

Owner contends that,

> *The analogue force pendulums are not measuring orientation* of the spacecraft relative to the horizon, or any object. *They are sensing vibrations on the space craft*. Each accelerometer in the '662 patent is measuring the position or orientation of the platform at every moment in time relative to the horizon. This is not the information that the spacecraft platform either needs or uses. The spacecraft uses the OSP **24** to align the platform orientation in relation to, in this

> case, not even the horizon because there is no horizon line in space, but a point in space.

(Mar I 2020 PO Response at 8). Owner further contends that the OSP **24** and the gyro package (GP) [**18**] of *West* do not provide the solution that '662 Patent provides and, thus, concludes that since the OSP **24** and gyro package (GP) [**18**] are not the second sensor package, they cannot be fixed to the platform. (*Id*. at 8-10).

First, the arguments related to the gyro package (GP) [**18**] and OSP **24** seem misplaced since the claim requirement is with respect to the first sensor being fixed relative to the base, not the second sensor or its position. Thus, the arguments thereof are deemed moot.

However, with respect to Owner's contention that the three analog force pendulums of the accelerometer package (ACP) [**8**] of *West* measure vibrational motion, the Examiner agrees. To support the Examiner's position, the Examiner finds that *West* discloses the accelerometer package (ACP) [**8**] consisting of *three analog force pendulums* in *an orthogonal configuration* for sensing *vibrational motion* of the shuttle, during operation thereof, on which the payload platform (*i.e.*, combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload) is attached.'. (*West* at §§ II.B, ¶ 2; V.A; see Figures 1, 8). The Examiner finds that the accelerometer package (ACP) [**8**] is fixed with respect to the base (*i.e*. base would constitute the combination of 'body two' including base plate **4**, pedestal **6** and support frame work **10**. (See comparison of Figures 1 and 8 of *West*).

With respect to any contention that the accelerometer package (ACP) [**8**] is not the first sensor package (see Mar I 2020 PO Response at 4-5), the Examiner finds this argument addressed above. (See *supra* § VII.A.(1).a.ii).

b. Claim 3

i. wherein the second sensor package includes two level sensors for sensing a position of the payload platform in two perpendicular directions

Owner contends that the gyro package (GP) [**18**] is not a level sensor because the GP has no gravitational reference, no reference to the horizon, and inherent drift factors. (Mar I 2020 PO Response at 10-11). The Owner further contends that the OSP would not stabilize the platform level on a bobbing boat. (*Id.* at 11). The Owner further contends that the OSP would not work in an earth bound stabilization system because targets would be obscured. (*Id.*)

In response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which Owner relies (*i.e.*, *utilized to stabilize a camera package on a boat at sea; OSP would not work in an earth bound stabilization system because targets would be obscured*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a

recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

With respect to the contention that the gyro package (GP) [**18**] is not a level sensor, the Examiner respectfully disagrees. In examination the '662 Patent, the Examiner finds insufficient disclosure further limiting the structure of the "level sensor" other than the level sensor providing position feedback relative to a predetermined position. ('662 Patent at c.4, ll. 40-45; 56-61). Thus, in view of the teachings of that the '662 Patent, the Examiner concludes that the '662 Patent provides sufficient evidence to the fact that prior art disclosing an embodiment in which a sensor provides level information would sufficiently meet the "*level sensor*" claim requirement.

From this perspective, the Examiner finds that the gyro package (GP) [**18**] (*i.e.*, a three-axis strap-down inertial reference unit) of *West* sufficiently meets the "second sensor package" claim requirement in accordance with *Phillips*. To support the Examiner's position, the Examiner finds that *West* discloses the gyro package (GP) [**18**], mounted on the underside of the equipment platform **22,** measuring the rate of rotation that results in <u>*delta angle*</u> output. (*West* at §§ II.B, ¶ 3; II.C, ¶¶ 2-4; see Figure 1). The Examiner finds that *West* discloses the rate measurements being transformed from an internal gyro coordinate system to the IPS coordinate system. (*Id.* at § II.C, ¶ 4). The Examiner finds that *West* discloses the "<u>*inertial attitude being maintained by the gyros*</u> and the attitude calculations performed in the DCU." (*Id.* at § IV, ¶ 1). The Examiner finds that "attitude" is "the position of a craft (such as an aircraft or spacecraft) determined by the

relationship between its axes and a reference datum (such as the horizon or a particular star)."[28] Thus, since the rate measurement of the equipment platform **22** is provided by the gyro package (GP) [**18**] and used to maintain the position of attitude of the equipment platform **22**, the Examiner concludes and maintains that the gyro package (GP) [**18**] of *West* sufficiently satisfies the structural requirements of the second sensor package including two "level sensors."

With respect to the contention that the OSP **24** is not a level sensor, the Examiner respectfully disagrees. First, Owner concedes that the (OSP) **24** of *West* can be utilized in space to "pick out a star or other cosmic entity" (Mar I 2020 PO Response at 6). However, the Examiner disagrees with Owner that the OSP **24** cannot be utilized in a non-space environment since the (OSP) **24** of *West* sufficiently satisfies the structural requirements of the second sensor package including "level sensors." The Examiner finds that an operator of the stabilized platform of *West* is able to select any target the operator could see and the positioning/orientating system would acquire, point to, and track the selected target. To support the Examiner's position, the Examiner find that *West* discloses the (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the OSP **24** providing information to *compensate for system drift and attitude errors accumulated during the gyro control*. (*Id* at §§ I, ¶ 3; I I.C, ¶ 3, 11; IV, ¶ 1). The Examiner finds that OSP **24** is functioning to perform the same correction tasks as

[28] "*attitude*." Merriam-Webster Online Dictionary. 2015. Merriam-Webster Online. 01 September 2020 <http://www.merriam-webster.com/dictionary/attitude>

disclosed by the '662 Patent. ('622 Patent at c.4, ll.47-53). The Examiner finds that *West* discloses the position/orientation sensing being based on the acquisition, pointing to, and tracking of a variety of astronomical targets, thus, the sensing and providing of positional/orientational information by the GP and OSP is relative to predetermined positions. (*Id.* at §§ II, ¶ 1; A, ¶¶ 1-3). Thus, since the inertial attitude error measurements of the equipment platform **22** are provided by OSP **24** and used to maintain the position of attitude of the equipment platform **22**, the Examiner concludes and maintains that the OSP **24** of *West* sufficiently satisfies the structural requirements of the second sensor package including the "level sensors"

c. Claim 4

i. wherein the second sensor package is mounted on the payload platform

Owner contends that the gyro package (GP) [**18**] and OSP **24** *may be mounted on* the payload platform, however, they are not the second sensor package. (Mar I 2020 PO Response at 11).

The Examiner finds that Owner does not challenge and agrees that *West* discloses the second sensor package being mounted on to the platform. (See *Id.* at p.11, l.246). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing the second sensor package being mounted on the platform to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

However, with respect to the gyro package (GP) [**18**] and OSP **24** not being the second sensor package, and thus, not mounted on the platform, the Examiner respectfully disagrees. The Examiner finds this contention (*i.e.*, the gyro package (GP) [**18**] and OSP **24** not being the second sensor package) the same as previously set forth by Owner. (Mar I 2020 PO Response at 5-6). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(1).a.iii).

d. Claim 14

i. Elements 14a-14b

The Examiner finds that Owner does not challenge and agrees that *West* discloses elements *14a-14b* of claim 14's requirements. (See Mar I 2020 PO Response at 11-12). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing elements *14a-14b* of claim 14's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 14c – stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package sensing motion of the moving object independent of motion of the payload platform

Owner contends that the accelerometer package (ACP) [**8**] does not measure motion because the ACP cannot measure pitch and roll motion of a moving object on which a stabilized platform is mounted. (Mar I 2020 PO Response at 12-13). Specifically, Owner contends that, since the '662 Patent is designed for the pitch and roll of a boat, the accelerometer package

(ACP) [**8**] cannot measure the pitch and roll of a boat. (*Id.*) Similarly, Owner contends that vibration motion sensed by the accelerometer package (ACP) [**8**] is the wrong information from the wrong sensor to work the way described in the '662 Patent and, thus, teaches away from the '662 Patent. (*Id.*)

The Examiner respectfully disagrees. First, in response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which Owner relies (*i.e., a sensor package must determine pitch and roll motion on a moving boat*; *sense or measure platform orientation*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In addition, "[a] reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989)" (See MPEP § 2123). In this light, the Examiner finds that the '662 Patent is not limited to determining motion *only* induced by pitch and roll of a camera *as well as operation thereof on boat at sea.* To support the Examiner's position, the Examiner finds that the '662 Patent discloses "the stabilized platform is stabilized *to compensate for motion caused by* waves, currents, wind and *other motion during land, air and sea operations of a camera*." (662 Patent at Abstract; c.3, ll.7-9; emphasis added). The Examiner finds that the '662 Patent further discloses *"[o]ne example of* a stabilized platform **100** *for use on boats and other vehicles* has the *capability of compensating for pitch and roll motions* of about 70 to about 90 degrees…." (*Id.* at c.5, ll.6-8). While the Examiner acknowledges that the '662 Patent discloses the determination/sensing of pitch and roll motion by a first sensor package on a boat during operation at sea, the Examiner finds that, as set forth *supra*, the disclosed examples of the '662 Patent do not teach away from determining/sensing orthogonal vibrational motion of a shuttle vehicle during operation in air/space, but instead are evidence to the fact that the '662 Patent contemplated/anticipated an embodiment of determining/sensing other motion in a variety of vehicles in multiple operational environments just as the preferred embodiment of determining/sensing of pitch and roll motion by a first sensor package on a boat during operation at sea. Thus, in view of the teachings of that the '662 Patent, the Examiner concludes that the '662 Patent provides sufficient evidence to the fact that prior art disclosing an embodiment in which other motion, including vibrational motion, is determined from a variety of vehicles in

multiple operational environments, *e.g.*, a shuttle operating in air/space, would sufficiently meet the "*first sensor package*" claim requirement.

From this perspective, the Examiner finds that the accelerometer package (ACP) [**8**] of *West* sufficiently meets the "first sensor package" claim requirement in accordance with *Phillips*. To support the Examiner's position, the Examiner finds that *West* discloses the accelerometer package (ACP) [**8**] consisting of three analog force pendulums in an orthogonal configuration for sensing *vibrational motion* of the shuttle, during operation thereof, on which the payload platform (*i.e.*, combination of an equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** forming 'a three dimensional structure on which a payload) is attached.'. (*West* at §§ II.B, ¶ 2; V.A; see Figures 1, 8). The Examiner finds that "vibrational motion" is other motion that is generated by the shuttle during operation thereof in air/space.

In addition, and with respect to the contention that the accelerometer package (ACP) [**8**] of *West* teaches away from the '662 Patent, the Examiner finds this argument misplaced and moot since the rejection of *West* is anticipatory. To support the Examiner's position, the MPEP states, "[a]rguments that the alleged anticipatory prior art is 'nonanalogous art' or 'teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention, [are] not 'germane' to a rejection under section 102." *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986) (quoting *In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). (See MPEP § 2131.05). The Examiner concludes that *West* is anticipatory prior art since it explicitly and/or inherently discloses every limitation recited in the claims, as set *supra*. Thus, the argument is deemed moot.

Thus, in view of the teachings of *West*, the Examiner concludes and maintains that *West* sufficiently discloses "stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package sensing motion of the moving object independent of motion of the payload platform."

iii. Elements 14d - sensing by a second sensor package, which is fixed to the payload platform, a position of the payload platform relative to a predetermined position; and 14e - self correcting the position of the payload platform to the predetermined position based on information collected by the second sensor package.

Owner contends that, since the OSP is designed for space, one of ordinary skill in the art would not look to or have the motivation to utilize the OSP for stabilizing a camera package on a boat at sea. (Mar I 2020 PO Response at 13-14).

The Examiner respectfully disagrees. In response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which Owner relies (*i.e.*, *utilized to stabilize a camera package on a boat at sea; OSP would not work in an earth bound stabilization system because targets would be obscured*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For

example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

With respect the (OSP) **24**, Owner concedes that the (OSP) **24** of *West* can be utilized in space to "pick out a star or other cosmic entity." (Mar I 2020 PO Response at 13). However, the Examiner disagrees with Owner that the OSP **24** cannot be utilized in a non-space environment since the (OSP) **24** of *West* sufficiently satisfies the step of a second sensor package sensing a position/orientation of a payload platform relative to a predetermined position and self-correcting the position of the payload platform to the predetermined position. To support the Examiner's position, the Examiner find that *West* discloses the (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the OSP **24** providing information to compensate for system drift and attitude errors accumulated during the gyro control. (*Id* at §§ I, ¶ 3; I I.C, ¶ 3, 11; IV, ¶ 1). The Examiner finds that *West* discloses the position/orientation sensing being based on the acquisition, pointing to, and tracking of a variety of astronomical targets, thus, the sensing and providing of positional/orientational information by the GP and OSP is relative to predetermined

positions. (*Id.* at §§ II, ¶ 1; A, ¶¶ 1-3). Thus, since the inertial attitude error measurements of the equipment platform **22** are provided by OSP **24** and used to maintain the position of attitude of the equipment platform **22**, the Examiner concludes and maintains that the OSP **24** of *West* sufficiently satisfies the steps of "sensing by a second sensor package, which is fixed to the payload platform, a position of the payload platform relative to a predetermined position; and self correcting the position of the payload platform to the predetermined position based on information collected by the second sensor package."

e. Claim 31

i. Elements 31a-31b

The Examiner finds that Owner does not challenge and agrees that *West* discloses elements *31a-31b* of claim 31's requirements. (See Mar I 2020 PO Response at 14). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing elements *31a-31b* of claim 31's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 31c - continuously stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package fixed relative to the moving vehicle and sensing motion of the moving vehicle

Owner contends that the accelerometer package (ACP) [**8**] does not measure motion because the ACP cannot measure pitch and roll motion of a moving object on which a stabilized

platform is mounted. (Mar I 2020 PO Response at 15-16). Specifically, Owner contends that, since the '662 Patent is designed for the pitch and roll of a boat, the accelerometer package (ACP) [**8**] cannot measure the pitch and roll of a boat. (*Id.*) Similarly, Owner contends that vibration motion sensed by the accelerometer package (ACP) [**8**] is the wrong information from the wrong sensor to work the way described in the '662 Patent and, thus, teaches away from the '662 Patent. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 12-13). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(1).d.ii).

iii. Element 31d - periodically self correcting a position of the payload platform based on information collected by the second sensor package including a level sensor and mounted on the platform.

Owner contends that the "second sensor package is preferably level sensors" as evidenced by claim 3. (Mar I 2020 PO Response at 17). Owner contends that, since the OSP is designed for space, one of ordinary skill in the art would not look to or have the motivation to utilize the OSP for stabilizing a camera package on a boat at sea. (*Id.* at 17-18).

In response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which applicant relies (*i.e.*, *utilized to stabilize a camera package on a boat at sea; OSP would not work in an earth bound stabilization system because targets would be obscured*) are not recited in the rejected claim(s).

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

With respect to the contention that the OSP **24** is not a level sensor, the Examiner respectfully disagrees. First, Owner concedes that the (OSP) **24** of *West* can be utilized in space to "pick out a star or other cosmic entity" (Mar I 2020 PO Response at 6). However, the Examiner disagrees with Owner that the OSP **24** cannot be utilized in a non-space environment since the (OSP) **24** of *West* sufficiently satisfies the structural requirements of the second sensor package including "level sensors." The Examiner finds that an operator of the stabilized platform of *West* is able to select any target the operator could see and the positioning/orientating system would acquire, point to, and track the selected target. To support the Examiner's position, the Examiner find that *West* discloses the (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment

flanges **26** combination that forms the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the OSP **24** providing information to *compensate for system drift and attitude errors accumulated during the gyro control*. (*Id* at §§ I, ¶ 3; I I.C, ¶ 3, 11; IV, ¶ 1). The Examiner finds that OSP **24** is functioning to perform the same correction tasks as disclosed by the '662 Patent. ('622 Patent at c.4, ll.47-53). The Examiner finds that *West* discloses the position/orientation sensing being based on the acquisition, pointing to, and tracking of a variety of astronomical targets, thus, the sensing and providing of positional/orientational information by the GP and OSP is relative to predetermined positions. (*Id*. at §§ II, ¶ 1; A, ¶¶ 1-3). Thus, since the inertial attitude error measurements of the equipment platform **22** are provided by OSP **24** and used to maintain the position of attitude of the equipment platform **22**, the Examiner concludes and maintains that the OSP **24** of *West* sufficiently satisfies the structural requirements of the second sensor package including "level sensors" and the step of "periodically self correcting a position of the payload platform based on information collected by the second sensor package."

f. Claim 32

i. Elements 32a-32d, 32g

The Examiner finds that Owner does not challenge and agrees that *West* discloses elements *32a-32d* and *32g* of claim 32's requirements. (See Mar I 2020 PO Response at 18, 21). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing elements *32a-32d* and *32g* of claim 32's requirements to advance prosecution of this patent

reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 32e - a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted

Owner contends that the accelerometer package (ACP) [**8**] does not measure motion because the ACP cannot measure pitch and roll motion of a moving object on which a stabilized platform is mounted. (Mar I 2020 PO Response at 18-19). Specifically, Owner contends that, since the '662 Patent is designed for the pitch and roll of a boat, the accelerometer package (ACP) [**8**] cannot measure the pitch and roll of a boat. (*Id.*) Similarly, Owner contends that vibration motion sensed by the accelerometer package (ACP) [**8**] is the wrong information from the wrong sensor to work the way described in the '662 Patent and, thus, teaches away from the '662 Patent.

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 4-5). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(1).a.ii).

iii. Element 32f - a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

Owner contends that the "second sensor package is preferably level sensors" as evidenced by claim 3. (Mar I 2020 PO Response at 20). Owner contends that the gyro package

(GP) does not sense position as required by the '662 Patent, nor have reference to any to the Earth's horizon or level. (*Id*). Owner contends that, since the OSP is designed for space, one of ordinary skill in the art would not look to or have the motivation to utilize the OSP for stabilizing a camera package on a boat at sea. (*Id*. at 20-21).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id*. at 5-6). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(1).a.iii).

iv. Element 32h - wherein the second sensor package is fixed to the payload platform, and

Owner contends that the gyro package (GP) [**18**] and OSP **24** *may well be fixed* to the payload platform, however, they are not the second sensor package. (Mar I 2020 PO Response at 21-22).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id*. at 7-8). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(1).a.iv).

v. Element 32i - wherein the control system allows a user to set an initial payload platform position and provides self correction of the platform to the initial position

Owner contends that *West* does not anticipate this limitation because there is no indication that the operator sets an angled or offset of the payload platform with respect to a horizon. (Mar I 2020 PO Response at 23).

The Examiner respectfully disagrees. In response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which applicant relies (*i.e., an operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In this light, the Examiner finds that *West* discloses the position/orientation sensing being based on the acquisition, pointing to, and tracking of a variety of astronomical targets, thus, the sensing and providing of positional/orientational information by the GP and OSP is relative to predetermined positions which are set by users of the IPS. (*Id.* at §§ II, ¶ 1; A, ¶¶ 1-3; emphasis on "manual point" at § II.A, ¶ 3). As an example, the Examiner finds that at least the "manual pointing" of the Astro- 1 system of *West* inherently includes an operator choosing a target for viewing and/or information capture that is offset from the initial payload platform preset-travel position. The Examiner additionally finds that this "manual pointing" location would be based upon an operator's horizon view of the shuttle in space or the payload platform's horizon view. Once the "manual point" is selected by the operator, the Examiner finds that the digital controller receives feedback from the ACP **8**, GP **18** and OSP **24**, respectively, and controls the stabilization of the payload. (*Id.* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3, 11). The Examiner finds that the digital controller receives feedback from the OSP **24**/ADF to provide a second slow control loop to compensate for attitude updates and system drift estimates. (*Id.*)

Thus, in view of the teachings of *West*, the Examiner concludes and maintains that *West* sufficiently discloses "the control system allow[ing] a user to set an initial payload platform position and provides self correction of the platform to the initial position."

g. Claim 35

i. Elements 35a-35d, 35g

The Examiner finds that Owner does not challenge and agrees that *West* discloses elements *35a-35d* and *35g* of claim 35's requirements. (See Mar I 2020 PO Response at 24, 27). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing

elements *35a-35d* and *35g* of claim 35's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 35e - a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted

Owner contends that the accelerometer package (ACP) [**8**] does not measure motion because the ACP cannot measure pitch and roll motion of a moving object on which a stabilized platform is mounted. (Mar I 2020 PO Response at 25). Specifically, Owner contends that, since the '662 Patent is designed for the pitch and roll of a boat, the accelerometer package (ACP) [**8**] cannot measure the pitch and roll of a boat. (*Id.*) Similarly, Owner contends that vibration motion sensed by the accelerometer package (ACP) [**8**] is the wrong information from the wrong sensor to work the way described in the '662 Patent and, thus, teaches away from the '662 Patent.

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 4-5, 18-19). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(1).a.ii).

iii. Element 35f - a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

Owner contends that the "second sensor package is preferably level sensors" as evidenced by claim 3. (Mar I 2020 PO Response at 26). Owner contends that the gyro package (GP) does not sense position as required by the '662 Patent, nor have reference to any to the Earth's horizon or level. (*Id*). Owner contends that, since the OSP is designed for space, one of ordinary skill in the art would not look to or have the motivation to utilize the OSP for stabilizing a camera package on a boat at sea. (*Id*. at 26-27).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id*. at 5-6. 20-21). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(1).a.iii).

iv. Element 35h - wherein the second sensor package is fixed to the payload platform, and

Owner contends that the gyro package (GP) [**18**] and OSP **24** *may well be fixed* to the payload platform, however, they are not the second sensor package. (Mar I 2020 PO Response at 21-22).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id*. at 5-6, 7-8, 22). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(1).a.iv).

v. Element 35i - wherein the first sensor package comprises sensors for sensing a different type of information from the sensor means in the second sensor package

Owner agrees that *West* discloses the analog force pendulum measurements sensed by the ACP **8** as being different from both the rate motion sensed by the GP **18** and the inertial measurements determined by the OSP **24**. (Mar I 2020 PO Response at 28). However, Owner contends that the sensors of *West* are not the first or second package of the '662 Patent, as previously discussed. (*Id*. at 29)

The Examiner finds that Owner does not challenge and agrees that *West* discloses the first and second sensor packages sensing different types of information. (See *Id*. at p.28, l.645 – p.29, l.646). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing the first and second sensor packages sensing different types of information to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

However, with respect to the contention that the ACP **8** is not the first sensor package and the gyro package (GP) [**18**] and OSP **24** not being the second sensor package, the Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id*. at 4-5, 18-19, 25; and 5-6, 20-21, 26-17). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(1).a.ii-iii).

h. Claim 38 [29]

i. Elements 38a-38d, 38g

The Examiner finds that Owner does not challenge and agrees that *West* discloses elements *38a-38d* and *385g* of claim 38's requirements. (See Mar I 2020 PO Response at 3-4). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing elements *38a-38d* and *385g* of claim 38's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 38e - a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted

Owner contends that the accelerometer package (ACP) [**8**] does not measure motion because the ACP cannot measure pitch and roll motion of a moving object on which a stabilized platform is mounted. (Mar I 2020 PO Response at 31-32). Specifically, Owner contends that, since the '662 Patent is designed for the pitch and roll of a boat, the accelerometer package (ACP) [**8**] cannot measure the pitch and roll of a boat. (*Id.*) Similarly, Owner contends that vibration motion sensed by the accelerometer package (ACP) [**8**] is the wrong information from the wrong sensor to work the way described in the '662 Patent and, thus, teaches away from the '662 Patent.

[29] The Mar I 2020 PO Response addresses claim 38's elements with respect to claim 1. (See Mar I 2020 PO Response at 29-32). In the instant Final Office action, the Examiner deems these arguments as being directed to "claim 38" as evidenced by the last element "38h." (*Id.* at 34). In addition, the Examiner finds that claim 38 does not require the claim limitation of "wherein the second sensor package is fixed to the payload platform." Thus, the claim requirement will not be addressed in the instant response regarding claim 38.

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 4-5, 18-19, 25). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(1).a.ii).

iii. Element 38f - a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

Owner contends that the "second sensor package is preferably level sensors" as evidenced by claim 3. (Mar I 2020 PO Response at 31). Owner contends that the gyro package (GP) does not sense position as required by the '662 Patent, nor have reference to any to the Earth's horizon or level. (*Id*). Owner contends that, since the OSP is designed for space, one of ordinary skill in the art would not look to or have the motivation to utilize the OSP for stabilizing a camera package on a boat at sea. (*Id.* at 31-32).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 5-6. 20-21, 26-27). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(1).a.iii).

iv. Element 38h - wherein the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package

Owner contends that even though the data rates of *West* may be faster or slower, *West* is not solving the same problem as the '662 Patent because stabilization in space is non-analogous to stabilization on earth. (Mar I 2020 PO Response at 34).

The Examiner finds that Owner does not challenge and agrees that *West* discloses the control system responding to information from the first sensor package more often than the control system responds to information from the second sensor package. (See *Id.* at p.34, ll.769-770). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

However, with respect to the contention that *West* is nonanalogous art (*i.e.*, a person of ordinary skill in the art would never consider an OSP for any purpose to control stabilization of the payload platform on earth (Mar I 2020 PO Response at 34)), the Examiner finds this argument misplaced and moot since the rejection of *West* is anticipatory. To support the Examiner's position, the MPEP states, "[a]rguments that the alleged anticipatory prior art is 'nonanalogous art' or 'teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention, [are] not 'germane' to a rejection under section 102." *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986) (quoting *In re Self*, 671 F.2d

1344, 213 USPQ 1, 7 (CCPA 1982)). (See MPEP § 2131.05). The Examiner concludes that *West* is anticipatory prior art since it explicitly and/or inherently discloses every limitation recited in the claims, as set *supra*. Thus, the argument is deemed moot.

(2) Ground 2: West, Wessling and Hartmann

a. Claims 1, 3, 4, 14, 31, 32 and 35; Claim 32

i. wherein the second sensor package is fixed to/mounted on the payload platform; and (claim 32) wherein the control system allows a user to set an initial payload platform position

Owner contends that *Wessling and Hartmann* do not cure the deficiency of *West* since *West* discloses a gravity free environment without a horizon, thus, resulting in a combination of sensors will not work like the '662 Patent teaches. (Mar I 2020 PO Response at 35). Owner contends that *Wessling and Hartmann* also teach a first sensor package that measures vibration instead of orientation and an OSP that bears no relationship to a level sensor. (*Id*. at 35-36).

The Examiner respectfully disagrees. In response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which applicant relies (*i.e., gravity bound system with horizon environment; '662 Patent teaches sensors that require gravity and a horizon; first sensor package measuring orientation*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough

understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

With respect to the contention that the OSP **24** is not a level sensor, the Examiner respectfully disagrees. First, Owner concedes that the (OSP) **24** of *West* can be utilized in space to "pick out a star or other cosmic entity" (Mar I 2020 PO Response at 6). However, the Examiner disagrees with Owner that the OSP **24** cannot be utilized in a non-space environment since the (OSP) **24** of *West* sufficiently satisfies the structural requirements of the second sensor package including "level sensors." The Examiner finds that an operator of the stabilized platform of *West* is able to select any target the operator could see and the positioning/orientating system would acquire, point to, and track the selected target. To support the Examiner's position, the Examiner find that *West* discloses the (OSP) [**24**] being mounted onto the IPS components of the equipment platform **22**, attachment ring **23**, payload support structure **25** and payload attachment flanges **26** combination that forms the three dimensional structure on which a payload is attached. (*Id* at §§ I, ¶ 3; II.B, ¶ 4; see Figure 1; emphasis on Figure 1 being view of "IPS components" only, not "IPS components" with additional payload attached thereto). The Examiner finds that *West* discloses the OSP **24** providing information to *compensate for system*

drift and attitude errors accumulated during the gyro control. (*Id* at §§ I, ¶ 3; I I.C, ¶ 3, 11; IV, ¶ 1). The Examiner finds that OSP **24** is functioning to perform the same correction tasks as disclosed by the '662 Patent. ('622 Patent at c.4, ll.47-53). The Examiner finds that *West* discloses the position/orientation sensing being based on the acquisition, pointing to, and tracking of a variety of astronomical targets, thus, the sensing and providing of positional/orientational information by the GP and OSP is relative to predetermined positions. (*Id*. at §§ II, ¶ 1; A, ¶¶ 1-3). Thus, since the inertial attitude error measurements of the equipment platform **22** are provided by OSP **24** and used to maintain the position of attitude of the equipment platform **22**, the Examiner concludes and maintains that the OSP **24** of *West* sufficiently satisfies the structural requirements of the second sensor package including the "level sensors".

In addition, with respect to the contention that the OSP **24** will not work as the '662 Patent**,** first, the Examiner finds that Owner concedes that "*OSP could work*… assuming clear skies and something to track that is not the object picture boat." (*Id*. at 35, ll.796-798).

With respect to the contention that *Wessling and Hartmann* are nonanalogous art (*i.e.*, a person of ordinary skill in the art would not be looking at a space craft in zero gravity and decide that it's sensors can translate to an earth bound boat (Mar I 2020 PO Response at 36), it has been held that a prior art reference must either be in the field of Owner's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the Examiner finds that *Wessling and*

Hartmann are analogous because it is in the field of Owner's endeavor and reasonably pertinent to the particular problem with which Owner was concerned.[30]

First, the Examiner finds that Owner's field of endeavor is a self-leveling stabilizing platform that compensates for motion caused by waves, currents, wind and other motion during land, air and sea operations of a camera." (662 Patent at Abstract; c.3, ll.7-9). While the Examiner agrees that *West* is directed to space applications, the Examiner finds that *West* is still in Owner's field of endeavor because *West* is directed a three-axis stabilized instrument pointing system (IPS) that was developed to point instruments with stability and accuracy. (*West* at §§ I, ¶¶ 1-3; see Figure 1). Thus, the Examiner reasonably concludes that *West* is in the field of Owner's endeavor.

In addition, the Examiner finds that *West* is reasonably pertinent to the particular problem with which the applicant was concerned. The Examiner finds that Owner's invention is to utilize two independent sensor packages located respectively on a base and payload platform to provide self leveling or self correcting. (662 Patent at Abstract; c.4, ll.62-67). In this light, the Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8**, GP **18** and OSP **24**, respectively, and controls the stabilization of the payload. (*Id.*) The Examiner finds that the digital controller receives feedback from the ACP **8** and GP **18** to provide a first fast control loop (*i.e.*, 25 Hz). (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller

[30] The Examiner finds, and Owner agrees, that *Wessling and Hartmann* teach the same IPS as disclosed in *West*. (See Mar I 2020 PO Response at 35-36). Therefore, as set forth *infra*, the Examiner cites to *West* for analogous argument response.

receives feedback from the OSP **24**/ADF to provide a second slow control loop (*i.e.*, 1 Hz) to compensate for attitude updates and system drift estimates. (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3, 11). Thus, the Examiner reasonably concludes that *West* is reasonably pertinent to the particular problem with which the applicant was concerned.

Therefore, the Examiner concludes and maintains that *West* is analogous art and one of ordinary skill in the art would look the disclosure of *West* for stabilization platforms on earth.

(3) Ground 3: Tijsma

a. Claim 1

i. Elements 1a-1d, 1g, 1i

The Examiner finds that Owner does not challenge and agrees that *Tijsma* discloses elements *1a-1d, 1g* and *1i* of claim 1's requirements. (See Mar I 2020 PO Response at 40-41, 43). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing elements *1a-1d, 1g* and *1i* of claim 1's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 1e - a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted

Owner contends that the angular velocity sensors **28**, **29** are not measuring the rotation of the boat and then utilizing that signal to drive stabilization of the platform. (Mar I 2020 PO Response at 41). Owner contends that the angular velocity sensors **28**, **29** are not providing the

solution required in the '662 Patent and therefore teach away. (*Id.*) Owner contends that *Tijsma* requires three sets of sensors and thus cannot anticipate the stabilization. (*Id.*)

With respect the contention that the three sensors of *Tijsma* teach away because *Tijsma* has one more sensor than the '662 Patent requires, the Examiner respectfully disagrees. The Examiner finds that the invention is for a stabilized platform that *comprises* two sensor packages (*i.e.*, first and second sensor packages). The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Mars Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004). (MPEP § 2111.03.I). Thus, the Examiner finds that the *Tijsma* may include other sensors, in addition to the first and second sensor packages, and still satisfy the claim requirements.

In addition, with respect to the contention that *Tijsma* is nonanalogous art and teaches away from the '662 Patent (*i.e.*, an entirely different stabilization scheme that cannot anticipate and teaches away (Mar I 2020 PO Response at 41)), the Examiner finds this argument misplaced and moot since the rejection of *Tijsma* is anticipatory. To support the Examiner's position, the MPEP states, "[a]rguments that the alleged anticipatory prior art is 'nonanalogous art' or 'teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention, [are] not 'germane' to a rejection under section 102." *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986) (quoting *In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). (See MPEP § 2131.05). The Examiner concludes that *Tijsma* is anticipatory prior art since it explicitly and/or inherently discloses every limitation recited in the claims, as set *supra*. Thus, the argument is deemed moot.

With respect the contention that the angular velocity sensors **28**, **29** are not measuring the rotation of the boat and then utilizing that signal to drive stabilization of the platform. The Examiner respectfully disagrees. The Examiner finds that the angular velocity sensors **28**, **29** are mounted on the gimbal **5** and are measuring the angular rate of motion at which there is an error about axes **1**, **2**. (*Tijsma* at c.3, ll.54-61). Since the gimbal **5** is attached to the deck of the ship, the Examiner finds that any angular rate of motion that is being measured by the angular velocity sensors **28**, **29** is with respect to the ship (*i.e.*, motion of a moving object). (*Tijsma* at c.2, ll.45-46).

Thus, in view of the teachings of *Tijsma*, the Examiner concludes and maintains that *Tijsma* sufficiently discloses "a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted."

iii. Element 1f - a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

Owner contends that the synchros **10**, **11** of *Tijsma* are not level sensors because they do not sense the horizon or the vector of earth's gravity. (Mar I 2020 PO Response at 42). Owner contends the synchros of *Tijsma* are similar to that of *Welch* (U.S. Patent No. 5,922,039) and since the Office previously determined that the sensors of *Welch* were not level sensors, *Tijsma's* synchros cannot be level sensors. (*Id.*) Owner contends that *Tijsma* does not anticipate this limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (*Id.* at 42-43).

The Examiner respectfully disagrees. First, in response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which applicant relies (*i.e.*, *level sensor must sense the horizon or the vector of earth's gravity*; and *predetermined position is an angled or offset of the payload platform with respect to a horizon*; *a small camera stabilizer usable device*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

With respect to the contention that the synchros **10**, **11** are not level sensors, the Examiner respectfully disagrees. In examination the '662 Patent, the Examiner finds insufficient disclosure further limiting the structure of the "level sensor" other than the level sensor providing position feedback relative to a predetermined position. ('662 Patent at c.4, ll. 40-45; 56-61). Thus, in view of the teachings of that the '662 Patent, the Examiner concludes that the '662

Patent provides sufficient evidence to the fact that prior art disclosing an embodiment in which a sensor provides level error/difference information, would sufficiently meet the "*level sensor*" claim requirement.

From this perspective, the Examiner finds that *Tijsma* discloses the synchros **10**, **11** providing, with respect to their respective axes, error voltages correlating to "the platform **3** not being in a perfectly horizontal position." (*Tijsma* at c.2, ll.59-62). The Examiner finds that the horizontal position is based upon a predetermined and preset position based upon the vertical gyro **7** directed normal to the earth's surface. (*Id.* at c.2, ll.46-50). Thus, the Examiner concludes that error voltages relative to the horizontal state of the platform **3** of *Tijsma* would inherently be position difference level information relative to the desired predetermined horizontal position.

Furthermore, while the Office did previously conclude that the sensors of *Welch* were *not fixed to the payload platform*, the Examiner finds that the Office did not conclude that the sensors of *Welch* were not level sensors. To support the Examiner's position, the Examiner finds that the Action Closing Prosecution mailed 04 March 2008 in the *inter partes* reexamination of the '662 Patent (*i.e.*, *inter partes* reexamination control No. 95/000,092 ("'092 IP Proceedings"))(Mar 2008 ACP '092 IP Proceedings") specifically provided no position as to the functionality of the position sensors **27**, **29** and only concluded that "*Welch* does not teach the second sensor package [being] fixed to the payload platform **16**." (Mar 2008 ACP '092 IP Proceedings at 12-13). Consequently, the Examiner concludes that Owner's findings that the synchros of *Tijsma* are not level sensors since they are comparable to position sensors of *Welch* is incorrect and misplaced.

Thus, in view of the teachings of *Tijsma*, the Examiner concludes and maintains that the synchros **10**, **11** of *Tijsma* sufficiently satisfies the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2).

iv. Element 1h - wherein the second sensor package is fixed to the payload platform, and

Owner contends that, since the synchros of *Tijsma* are not level sensors and do not correct for drift to the horizon, the synchros cannot be fixed to the payload platform. (Mar I 2020 PO Response at 43-44). Owner contends that the synchro is a split sensor and can only be partly on the housing and partly on the moving shaft, thus, not fixed to the payload platform. (*Id.*)

With respect to the synchros **10**, **11** not being the second sensor package, and thus, not fixed to the platform, the Examiner respectfully disagrees. The Examiner finds this contention (*i.e.*, the synchros **10**, **11** not being the second sensor package) the same as previously set forth by Owner. (Mar I 2020 PO Response at 43). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(3).a.iii).

With respect to the synchros **10**, **11** not being fixed to the platform, the Examiner respectfully disagrees. The Examiner finds that Figure 1 of *Tijsma* illustrates the synchros **10**, **11** being fixed to the gyro housing **6** of the gyro **7** just as the '662 Patent discloses the second sensor package being fixed to the payload platform (*i.e.*, see box B connected to structure in Figures 2, 3 of the '662 Patent). The Examiner agrees with Owner that synchros **10**, **11** are more than likely partly on the housing and partly on the shaft of the gryo **7**. However, the Examiner finds that Figures 2, 3 of the '662 Patent specifically show a "black box" of the second sensor package

with no specific disclosure to the exact make-up of the second sensor package and how it is orientated and sensing levelness within the black box, only that the outside thereof is fixed to the payload platform. Hence, since the gyroscope housing **6** is specifically carried by and in direct contact with the platform **3**, that forms the three dimensional structure on which a payload is attached, the Examiner finds that the gyroscope housing **6**, therefore, is rigidly fixed to the platform **3** that forms the three dimensional structure on which a payload is attached in the same way as the '662 Patent discloses.

Thus, the Examiner concludes that the gyroscope housing **6**, including synchros **10**, **11** partly on and attached thereto, is fixed (*i.e.*, "securely fastened to and stationary relative to") to the platform **3** as *Voice v OCR I* requires. (See § V.B.(5) *supra*).

b. Claim 3

i. wherein the second sensor package includes two level sensors for sensing a position of the payload platform in two perpendicular directions

Owner contends that the synchros **10**, **11** of *Tijsma* are not level sensors because they do not sense gyro drift or the horizon or the vector of earth's gravity. (Mar I 2020 PO Response at 44). Owner contends that the synchros **10**, **11** of *Tijsma* are not fixed to the payload platform. (*Id*. at 44-45). Owner provides further arguments with respect to the second sensor package being the gyro **7**; the gyro not directly running the platform; and *Tijsma* requiring a third sensor teaches away from the '662 Patent. (*Id*. at 45).

With respect to the synchros **10**, **11** not being the second sensor package, and thus, not fixed to the platform, the Examiner respectfully disagrees. The Examiner finds this contention

(*i.e.*, the synchros **10**, **11** not being the second sensor package) the same as previously set forth by Owner. (Mar I 2020 PO Response at 43-44). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(3).a.iv).

With respect to Owner's further arguments (*i.e.*, the second sensor package being the gyro **7**; the gyro not directly running the platform; and *Tijsma* requiring a third sensor teaches away from the '662 Patent), the Examiner finds these argument as misplaced. However, in order to expedite prosecution, the Examiner will address the functionality of *Tijsma* and how it is interpreted in light of the claim requirements. First, the Examiner has interpreted the synchros **10**, **11** of *Tijsma* as the level sensors, not the gyro **7**. Consequently, the Examiner finds that the gyro **7** is running the platform **3** with respect to levelness of the gyro **7** sensed by the synchros **10**, **11**. The Examiner finds that the angular velocity sensors **28**, **29** that are mounted on the gimbal **5** are measuring the angular rate of motion at which there is an error about axes **1**, **2**. (*Tijsma* at c.3, ll.54-61). Since the gimbal **5** is attached to the deck of the ship, the Examiner finds that any angular rate of motion that is being measured by the angular velocity sensors **28**, **29** is with respect to the ship (*i.e.*, motion of a moving object). (*Tijsma* at c.2, ll.45-46). The Examiner finds *Tijsma* discloses the stabilization system including servo preamplifier **12** connected to servo final amplifier **15** that provides stabilization about each of the motorized axis **1**, **2** of the platform **3** based upon the motion sensed output of the angular velocity sensors **28**, **29** and horizontal levelness sensed output of the synchros **10**, **11**. (*Tijsma* at c.1, ll.5-14; c.3, ll.3-39; c.4, ll.54-62; see Figure 1).

With respect the contention that the three sensors of *Tijsma* teach away because *Tijsma* has one more sensor than the '662 Patent requires, the Examiner respectfully disagrees. The Examiner finds that the invention is for a stabilized platform that *comprises* two sensor packages

(*i.e.*, first and second sensor packages). The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Mars Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004). (MPEP § 2111.03.I). Thus, the Examiner finds that the *Tijsma* may include other sensors, in addition to the first and second sensor packages, and still satisfy the claim requirements.

In addition, and with respect to the contention that the synchros **10**, **11** of *Tijsma* teaching away from the '662 Patent, the Examiner finds this argument misplaced and moot since the rejection of *Tijsma* is anticipatory. To support the Examiner's position, the MPEP states, "[a]rguments that the alleged anticipatory prior art is 'nonanalogous art' or 'teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention, [are] not 'germane' to a rejection under section 102." *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986) (quoting *In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). (See MPEP § 2131.05). The Examiner concludes that *West* is anticipatory prior art since it explicitly and/or inherently discloses every limitation recited in the claims, as set *supra*. Thus, the argument is deemed moot.

c. Claim 4

i. wherein the second sensor package is mounted on the payload platform

Owner contends that the synchros **10**, **11** of *Tijsma* are not level sensors because they do not sense the horizon or the vector of earth's gravity. (Mar I 2020 PO Response at 46). Owner contends the synchros of *Tijsma* are not fixed to the platform. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id*. at 44-45). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(3).a.iv).

d. Claim 14

i. Element 14a - [a] method of stabilizing and self correcting a camera platform comprising:

The Examiner finds that Owner does not challenge and agrees that *Tijsma* discloses element *14a* of claim 14's requirements. (See Mar I 2020 PO Response at 46). The Examiner will hereby rely on Owner's statements regarding agreement with *Tijsma* disclosing element *14a* of claim 14's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 14b - positioning a stabilized camera platform on a moving object

Owner contends that even though the *Tijsma* teaches a stabilized platform, *Tijsma* is not solving the same problem as the '662 Patent because stabilization the complexity of the stabilization scheme, heavy mass and cost effectiveness would not be used on a boat of the '662 Patent. (Mar I 2020 PO Response at 46-47).

The Examiner finds that Owner does not challenge and agrees that *Tijsma* discloses the stabilized platform. (See *Id*. at p.46, l.1054). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing the stabilized platform. See 37 C.F.R. §

1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

However, with respect to the contention that *Tijsma* is nonanalogous art and teaches away from the '662 Patent (*i.e.*, an entirely different stabilization scheme that cannot anticipate and teaches away (Mar I 2020 PO Response at 46-47)), the Examiner finds this argument misplaced and moot since the rejection of *West* is anticipatory. To support the Examiner's position, the MPEP states, "[a]rguments that the alleged anticipatory prior art is 'nonanalogous art' or 'teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention, [are] not 'germane' to a rejection under section 102." *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986) (quoting *In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). (See MPEP § 2131.05). The Examiner concludes that *Tijsma* is anticipatory prior art since it explicitly and/or inherently discloses every limitation recited in the claims, as set *supra*. Thus, the argument is deemed moot.

iii. Element 14c - stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package sensing motion of the moving object independent of motion of the payload platform

Owner contends that the angular velocity sensors **28**, **29** are not measuring the rotation of the boat and then utilizing that signal to drive stabilization of the platform. (Mar I 2020 PO Response at 47). Owner contends that the angular velocity sensors **28**, **29** are not providing the solution required in the '662 Patent and therefore teach away. (*Id.*) Owner contends that *Tijsma* requires three sets of sensors and thus cannot anticipate the stabilization. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 41). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(3).a.ii).

iv. Elements 14d - sensing by a second sensor package, which is fixed to the payload platform, a position of the payload platform relative to a predetermined position; and 14e - self correcting the position of the payload platform to the predetermined position based on information collected by the second sensor package.

Owner contends that the synchros **10**, **11** of *Tijsma* are not level sensors and do serve to correct errors such as gyro drift in the first sensor package. (Mar I 2020 PO Response at 48-49). Owner contends that *Tijsma* does not anticipate this limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (*Id.* at 42-43).

The Examiner respectfully disagrees. First, in response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which applicant relies (*i.e.*, *the level sensors serve to correct for gyro drift of the first sensor package*; and *predetermined position is an angled or offset of the payload platform with respect to a horizon*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written

description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

With respect to the synchros **10**, **11** not being the second sensor package, the Examiner respectfully disagrees. The Examiner finds this contention (*i.e.*, the synchros **10**, **11** not being the second sensor package) the same as previously set forth by Owner. (Mar I 2020 PO Response at 43-44). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(3).a.iii-iv).

e. Claim 31

i. Element 31a - [a] method of stabilizing and self correcting a camera platform comprising

The Examiner finds that Owner does not challenge and agrees that *West* discloses element *31a* of claim 31's requirements. (See Mar I 2020 PO Response at 49). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing element *31a* of claim 31's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 31b - positioning a stabilized camera platform on a moving vehicle

Owner contends that even though the *Tijsma* teaches a stabilized platform, *Tijsma* is not solving the same problem as the '662 Patent because stabilization the complexity of the stabilization scheme, heavy mass and cost effectiveness would not be used on a boat of the '662 Patent. (Mar I 2020 PO Response at 49-50).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 46-47). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(3).d.ii).

iii. Element 31c - continuously stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package fixed relative to the moving vehicle and sensing motion of the moving vehicle

Owner contends that the angular velocity sensors **28**, **29** are not measuring the rotation of the boat and then utilizing that signal to drive stabilization of the platform. (Mar I 2020 PO Response at 50). Owner contends that the angular velocity sensors **28**, **29** are not providing the solution required in the '662 Patent and therefore teach away. (*Id.*) Owner contends that *Tijsma* requires three sets of sensors and thus cannot anticipate the stabilization. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 41, 47). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(3).a.ii).

iv. Element 31d - periodically self correcting a position of the payload platform based on information collected by a second sensor package including a level sensor and mounted on the platform

Owner contends that the synchros **10**, **11** of *Tijsma* are not level sensors because they do not sense the horizon or the vector of earth's gravity. (Mar I 2020 PO Response at 51). Owner contends the synchros of *Tijsma* are similar to that of *Welch* (U.S. Patent No. 5,922,039) and since the Office previously determined that the sensors of Welch were not level sensors, *Tijsma's* synchros cannot be level sensors. (*Id.*) Owner contends that *Tijsma* does not anticipate this limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 42-43). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(3).a.iii).

f. Claim 32

i. Elements 32a-32d, 32g

The Examiner finds that Owner does not challenge and agrees that *Tijsma* discloses elements *32a-32d* and *32g* of claim 32's requirements. (See Mar I 2020 PO Response at 51-52, 54). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing elements *32a-32d* and *32g* of claim 32's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely

upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 32e - a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted

Owner contends that the angular velocity sensors **28**, **29** are not measuring the rotation of the boat and then utilizing that signal to drive stabilization of the platform. (Mar I 2020 PO Response at 52-53). Owner contends that the angular velocity sensors **28**, **29** are not providing the solution required in the '662 Patent and therefore teach away. (*Id.*) Owner contends that *Tijsma* requires three sets of sensors and thus cannot anticipate the stabilization. (*Id.* at 53).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 41, 47, 50). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(3).a.ii).

iii. Element 32f - a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

Owner contends that the synchros **10**, **11** of *Tijsma* are not level sensors because they do not sense the horizon or the vector of earth's gravity. (Mar I 2020 PO Response at 53). Owner contends the synchros of *Tijsma* are similar to that of *Welch* (U.S. Patent No. 5,922,039) and since the Office previously determined that the sensors of Welch were not level sensors, *Tijsma's* synchros cannot be level sensors. (*Id.*) Owner contends that *Tijsma* does not anticipate this

limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (*Id*. at 54).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id*. at 42-43, 49, 51). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(3).a.iii, VII.A.(3).d.ii.).

iv. Element 32h - wherein the second sensor package is fixed to the payload platform, and

Owner contends that, since the synchros of *Tijsma* are not level sensors and do not correct for drift to the horizon, the synchros cannot be fixed to the payload platform. (Mar I 2020 PO Response at 55). Owner contends that the synchro is a split sensor and can only be partly on the housing and partly on the moving shaft, thus, not fixed to the payload platform. (*Id*.)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id*. at 43-44). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(3).a.iv).

v. Element 32i - wherein the control system allows a user to set an initial payload platform position and provides self correction of the platform to the initial position

Owner contends that the angular velocity sensors **28**, **29** are not measuring the rotation of the boat and then utilizing that signal to drive stabilization of the platform. (Mar I 2020 PO Response at 55-56). Owner contends that the angular velocity sensors **28**, **29** are not providing

the solution required in the '662 Patent and therefore teach away. (*Id.*) Owner contends that *Tijsma* requires three sets of sensors and thus cannot anticipate the stabilization. (*Id.*)

The Examiner finds this contention as misplaced. Owner argues the limitations of the "first sensor package." (See comparison of Mar I 2020 PO Response at 52-53 to 55-56). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(3).a.ii, VII.A.(3).f.ii).

With respect to the limitation above, the Examiner finds that *Tijsma* sufficiently discloses a control system that allows a user to set an initial position and provide self correction based upon the initial position. (See § VI.C.(1).claim 32.i *supra*; and Dec 2019 Non-Final Office Action at § VII.C.(1).claim 32.i.)

g. Claim 35

i. Elements 35a-35d, 35g

The Examiner finds that Owner does not challenge and agrees that *West* discloses elements *35a-35d* and *35g* of claim 35's requirements. (See Mar I 2020 PO Response at 56, 58-59). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing elements *35a-35d* and *35g* of claim 35's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 35e - a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted

Owner contends that the angular velocity sensors **28**, **29** are not measuring the rotation of the boat and then utilizing that signal to drive stabilization of the platform. (Mar I 2020 PO Response at 56-57). Owner contends that the angular velocity sensors **28**, **29** are not providing the solution required in the '662 Patent and therefore teach away. (*Id.*) Owner contends that *Tijsma* requires three sets of sensors and thus cannot anticipate the stabilization. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 41, 47, 50, 52-53). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(3).a.ii).

iii. Element 35f - a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

Owner contends that the synchros **10**, **11** of *Tijsma* are not level sensors because they do not sense the horizon or the vector of earth's gravity. (Mar I 2020 PO Response at 53). Owner contends the synchros of *Tijsma* are similar to that of *Welch* (U.S. Patent No. 5,922,039) and since the Office previously determined that the sensors of Welch were not level sensors, *Tijsma's* synchros cannot be level sensors. (*Id.*) Owner contends that *Tijsma* does not anticipate this limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (*Id.* at 54).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 42-43, 49, 51, 53-54). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(3).a.iii, VII.A.(3).d.ii.).

iv. Element 35h - wherein the second sensor package is fixed to the payload platform, and

Owner contends that, since the synchros of *Tijsma* are not level sensors and do not correct for drift to the horizon, the synchros cannot be fixed to the payload platform. (Mar I 2020 PO Response at 59). Owner contends that the synchro is a split sensor and can only be partly on the housing and partly on the moving shaft, thus, not fixed to the payload platform. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 43-44, 55). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(3).a.iv).

v. Element 35i - wherein the first sensor package comprises sensors for sensing a different type of information from the sensor means in the second sensor package

Owner agrees that *Tijsma* discloses the angular velocity sensed by the angular velocity sensors **28**, **29** as being different from information sensed by the synchros **10**, **11**. (Mar I 2020 PO Response at 59). However, Owner contends that the sensors of *Tijsma* are not the first or second package of the '662 Patent, as previously discussed. (*Id.* at 59-60).

The Examiner finds that Owner does not challenge and agrees that *Tijsma* discloses the first and second sensor packages sensing different types of information. (See *Id*. at p.59, ll.1354-1356). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing the first and second sensor packages sensing different types of information to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

However, with respect to the contention that the angular velocity sensors **28**, **29** are not the first sensor package and the synchros **10**, **11** not being the second sensor package, the Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id*. at 41, 52-53, 56-57; and 42-43, 53-54, 57-58). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(3).a.ii-iii).

h. Claim 38 [31]

[31] The Mar I 2020 PO Response only addresses the "*wherein the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package*" claim requirement of claim 38. (See Mar I 2020 PO Response at 60). However, the Examiner finds that *Tijsma* sufficiently discloses elements "38a-38h" as indicated in the instant Office action at §§ VII.A.(3).a-g; and VI.C.(1).claim 38.a-h; and the Dec 2019 Non-Final Office Action at § VII.C.(2).

i. Element 38h - wherein the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package

Owner contends that even though the data rates of *West*[32] may be faster or slower, *West* is not solving the same problem as the '662 Patent because stabilization in space is non-analogous to stabilization on earth. (Mar I 2020 PO Response at 60).

The Examiner finds that Owner does not challenge and agrees that *West* discloses the control system responding to information from the first sensor package more often than the control system responds to information from the second sensor package. (See *Id.* at p.34, ll.769-770). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

However, with respect to the contention that *West* is nonanalogous art, it has been held that a prior art reference must either be in the field of Owner's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the Examiner finds that *West* is analogous because it is in the field of Owner's endeavor and reasonably pertinent to the particular problem with which Owner was concerned.

[32] Owner agrees, that *West*, *Wessling* and *Hartmann* are the same stabilized pointing system. (Mar I 2020 PO Response at 60). Therefore, as set forth *infra*, the Examiner cites to *West* for the analogous argument response.

First, the Examiner finds that Owner's field of endeavor is a self-leveling stabilizing platform that compensates for motion caused by waves, currents, wind and other motion during land, air and sea operations of a camera." ('662 Patent at Abstract; c.3, ll.7-9). While the Examiner agrees that *West* is directed to space applications, the Examiner finds that *West* is still in Owner's field of endeavor because *West* is directed a three-axis stabilized instrument pointing system (IPS) that was developed to point instruments with stability and accuracy. (*West* at §§ I, ¶¶ 1-3; see Figure 1). Thus, the Examiner reasonably concludes that *West* is in the field of Owner's endeavor.

In addition, the Examiner finds that *West* is reasonably pertinent to the particular problem with which the applicant was concerned. The Examiner finds that Owner's invention is to utilize two independent sensor packages located respectively on a base and payload platform to provide self leveling or self correcting. ('662 Patent at Abstract; c.4, ll.62-67). In this light, the Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8**, GP **18** and OSP **24**, respectively, and controls the stabilization of the payload. (*Id.*) The Examiner finds that the digital controller receives feedback from the ACP **8** and GP **18** to provide a first fast control loop (*i.e.*, 25 Hz). (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the OSP **24**/ADF to provide a second slow control loop (*i.e.*, 1 Hz) to compensate for attitude updates and system drift estimates. (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3, 11). Thus, the Examiner reasonably concludes that *West* is reasonably pertinent to the particular problem with which the applicant was concerned.

Therefore, the Examiner concludes and maintains that *West*, *Wessling* and *Hartmann* are analogous art.

(4) Ground 4: Bos

a. Claim 1

i. Elements 1a-1d, 1g

The Examiner finds that Owner does not challenge and agrees that *Bos* discloses elements *1a-1d* and *1g* of claim 1's requirements. (See Mar I 2020 PO Response at 63-64, 66-67). The Examiner will hereby rely on Owner's statements regarding agreement with *Bos* disclosing elements *1a-1d* and *1g* of claim 1's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 1e - a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted

While Owner agrees that the gyro stabilization system **26** provides stabilization for the stabilized platform and is thus the first sensor package, Owner contends the first sensor package of *Bos* would not be acceptable for uses on a camera boat for motion picture filming. (Mar I 2020 PO Response at 65). Owner contends that the location of the stabilization system and its infrastructure requirements would be impractical when filming requires moving from on boat to another. (*Id.*) Owner contends that a person of ordinary skill in the art would not look at this type of stabilization scheme for a motion picture stabilizer. (*Id.*)

The Examiner finds that Owner does not challenge and agrees that *Bos* discloses the first sensor package. (See *Id.* at p.65, ll.1474-1476). The Examiner will hereby rely on Owner's statements regarding agreement with *Bos* disclosing the first sensor package to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

However, in response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which applicant relies (*i.e.*, *use on a camera boat at sea*; and *not meeting the portability requirements and being impractical for a motion picture camera stabilizer*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed

invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

The Examiner finds that *Bos* discloses each orthogonal motors **6**, **7** receiving feedback from synchro transmitters **41**, **42** of gyro stabilization system **26** that sense the position relative to horizontal axis **4**, **5** of the gimbal frame **3** being fixed parallel to the deck of the ship. (*Bos* at c.1, l.63 – c.2, l.9; c.3, ll.3-17; c.4, ll.4-13; see Figure 1). Thus, in view of the teachings of *Bos*, the Examiner concludes and maintains that *West* sufficiently discloses "a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted."

With respect to the contention that *Bos* is nonanalogous art (*i.e.*, a person of ordinary skill in the art would not look at this type of stabilization scheme for a motion picture stabilizer (Mar I 2020 PO Response at 65)), the Examiner finds this argument misplaced and moot since the rejection of *West* is anticipatory. To support the Examiner's position, the MPEP states, "[a]rguments that the alleged anticipatory prior art is 'nonanalogous art' or 'teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention, [are] not 'germane' to a rejection under section 102." *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986) (quoting *In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). (See MPEP § 2131.05). The Examiner concludes that *West* is anticipatory prior art since it explicitly and/or inherently discloses every limitation recited in the claims, as set *supra*. Thus, the argument is deemed moot.

iii. Element 1f - a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

Owner contends that the second sensor package should be "a level sensor." (Mar I 2020 PO Response at 63, ll.1436-1437). Owner contends that the accelerometers **21**, **22** of *Bos* are not the required second sensor package because they do not provide correction to the first sensor package. (Mar I 2020 PO Response at 66). Owner also contends that *Bos* does not anticipate this limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (*Id.*)

The Examiner respectfully disagrees. In response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which applicant relies (*i.e., second sensor package of Bos not correcting for the gyro drift of the first sensor package*; and *an operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d

1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Moreover, with respect the second sensor package being required to be level sensors, the Examiner respectfully disagrees. The Examiner finds that the second sensor package is a second group of sensor elements that *comprises* the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2). The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Mars Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004). (MPEP § 2111.03.I). Thus, the Examiner finds that the second sensor package may include other sensors, notwithstanding level sensors, in addition to the FP2.

Furthermore, the Examiner finds that the FP2 is not solely limited to "level sensors." While the *Voice v OCR II* Court construed FP2 to be "one or more level sensors of the second sensor package," the Examiner finds that "[a] reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments." *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). The Examiner finds that the '662 Patent clearly and sufficiently discloses the second sensor package including one or more motion sensors to provide position feedback, *with a preference to level sensors*. ('662 Patent at c.4, ll.40-43). The Examiner finds that the '662 Patent provides "rate sensors, gyroscopic sensors, fiber optic sensors or other

sensors" as examples of motion sensors. (*Id.* at c.4, ll.28-29). The Examiner notes that a gyroscope measures the rate of rotation around a particular axis which it is associated with, thus, providing an indication of the orientation/position of the element the gyroscope is affixed thereto. Moreover, the Examiner finds that the '662 Patent provides evidence to the fact that "motion sensors" such as "rate sensors, gyroscopic sensors, fiber optic sensors or other sensors" provide both motion and position feedback. (*Id.* at c.4, ll. 27-30, 40-42). Thus, in view of the teachings of that the '662 Patent, the Examiner concludes that the '662 Patent provides sufficient evidence to the fact that prior art disclosing an embodiment in which a second group of sensor elements includes one or more motion sensor or level sensor, would sufficiently meet the "*second sensor package*" claim requirement.

In this light, and with respect the accelerometers **21**, **22**, the Examiner finds that the accelerometers **21**, **22** of *Bos* sufficiently satisfies the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2). To support the Examiner's position, the Examiner find that *Bos* discloses the gryo **10** being held in a vertical position by means of the two accelerometers **21**, **22**. (*Bos* at c.2, ll.56-68). The Examiner finds that *Bos* discloses the position/orientation sensing being based on the predetermined position of the platform **1** which is based upon the preset vertical position of the gyro **10** relative to the spin axis directed normal to the earth's surface, thus, the sensing and providing of positional/orientational information by accelerometers **21**, **22** is relative to set predetermined position. (*Id.* at c.1, ll.25-29; c.2, ll.5-9, 56-60). Thus, since the preset vertical position error measurements of the platform **1** are provided by accelerometers **21**, **22** and used to maintain the horizontal position of the platform **1**, the Examiner concludes and maintains that the

accelerometers **21**, **22** of *Bos* sufficiently satisfies the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2).

Additionally, with respect the synchro transmitters **12**, **13**, Owner has not provided a position that the synchro transmitters **12**, **13** of *Bos* do not satisfy the second sensor package claim requirement. However, the Examiner finds that the synchro transmitters **12**, **13** of *Bos* sufficiently satisfies the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2). To support the Examiner's position, the Examiner find that *Bos* discloses the gryo **10**/gyro housing**11**/platform **1** combination being held in a vertical position by misalignment voltages of the synchro transmitters **12**, **13**. (*Bos* at c.2, ll.23-39). The Examiner finds that *Bos* discloses the position/orientation sensing being based on the predetermined position of the platform **1** which is based upon the preset vertical position of the gyro **10** relative to the spin axis directed normal to the earth's surface, thus, the sensing and providing of positional/orientational misalignment voltages by synchro transmitters **12**, **13** is relative to set predetermined position. (*Id.* at c.1, ll.25-29; c.2, ll.5-9, 26-32). Thus, since the vertical position misalignment voltages of the platform **1** are provided by the synchro transmitters **12**, **13** and used to maintain the preset vertical position of the platform **1**, the Examiner concludes and maintains that the synchro transmitters **12**, **13** of *Bos* sufficiently satisfies the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2).

iv. Element 1h - wherein the second sensor package is fixed to the payload platform, and

Owner contends that the accelerometers **21**, **22** *are fixed* to the payload platform, however, they are not the second sensor package. (Mar I 2020 PO Response at 67). Specifically, Owner contends that the accelerometers **21**, **22** comprise the second sensor package with the second sensor package of *Bos* not correcting for the gyro drift of the first sensor package. (*Id.*)

The Examiner finds that Owner does not challenge and agrees that *Bos* discloses the second sensor package being fixed to the platform. (See *Id.* at p.67, ll.1534-1535). The Examiner will hereby rely on Owner's statements regarding agreement with *Bos* disclosing the second sensor package being fixed to the platform to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

However, with respect to the accelerometers **21**, **22** not being the second sensor package, and thus, not fixed to the platform, the Examiner respectfully disagrees. The Examiner finds this contention (*i.e.*, the accelerometers **21**, **22** not being the second sensor package) the same as previously set forth by Owner. (Mar I 2020 PO Response at 66). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(4).a.iii).

Furthermore and in addition to the accelerometers **21**, **22**, the Examiner finds that *Bos* also discloses a gyroscope housing **11**, having synchro transmitters **12**, **13** therein, to indicate the horizontal status of the platform **1**. (*Bos* at c.2, ll. 10-13, 26-30, 45-52, 58-60; see Figures 1, 2; also see § VII.A.(4).a.iii *supra*).

Thus, in view of the teachings of *Bos*, the Examiner concludes and maintains that *Bos* sufficiently discloses "wherein the second sensor package is fixed to the payload platform."

v. Element 1i - the first sensor package is fixed with respect to the base

Owner contends that the synchro transmitters **41**, **42** *are fixed* to the payload platform, however, they are not the first sensor package. (Mar I 2020 PO Response at 68). Specifically, Owner contends that the synchro transmitters **41**, **42** are measuring the position of the shaft within their housing and therefore themselves must be stabilized within their housing, not with respect to base. (*Id.*) Owner contends that "if the first sensor package were to be synchro transmitters, the '662 patent would not work." (*Id.*)

The Examiner finds that Owner does not challenge and agrees that *Bos* discloses the first sensor package being fixed to the platform. (See *id.* at p.68, ll.1544-1545). The Examiner will hereby rely on Owner's statements regarding agreement with *Bos* disclosing the first sensor package being fixed to the platform to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

With respect to Owner's contention that the synchro transmitters **41**, **42** are stabilized in their housing on a shaft and thus not "fixed with respect to" the base, the Examiner respectfully disagrees.[33] The Examiner finds that the *Voice v OCR I* construed the term "fixed with respect to" regarding the relationship of the first sensor package to the base to mean "in a continuous

[33] The argument provided by Owner on p.68, ll.1544-1546 of the Mar I 2020 PO Response is unclear. The Examiner construes the argument as being that since the synchro transmitters **41**, **42** are somehow stabilized within the gyro stabilization system **26**, the synchro transmitters **41**, **42** are not fixed with respect to the base.

unchanging relationship with." (See § V.B.(3) *supra*). First, Owner concedes that the synchro transmitters **41**, **42** must be stabilized to their housing within the gyro stabilization system **26**. (Mar I 2020 PO Response at 67). In this light, since the synchro transmitters **41**, **42** are housed within the gyro stabilization system **26**, which is fixed to the ship that the horizontal axis **4**, **5** of the gimbal frame **3** is fixed to, the Examiner finds that when the gyro stabilization system **26** moves with the ship and the gimbal frame **3**, the synchro transmitters **41**, **42** will move the same amount as well, thus, being in a "in a continuous unchanging relationship with" the gimbal **3**. Therefore, the housed synchro transmitters **41**, **42** within gyro stabilization system **26** of *Bos* are "in a continuous unchanging relationship with" the gimbal **3**, and thus, "fixed with respect to." From this perspective, the Examiner concludes and maintains that the synchro transmitters **41**, **42** of *Bos* sufficiently meets the "first sensor package being fixed with respect to base" claim requirement in accordance with *Phillips*.

With respect to Owner's contention that the '662 patent would not work if the first sensor package were to be synchro transmitters, the Examiner finds that this contention is misplaced and moot. If the prior art structure is capable of performing the intended use, then it meets the claim requirement. The Examiner finds that the synchro transmitters **41**, **42** of *Bos* sufficiently meet the "first sensor package" claim requirement in accordance with *Phillips*. (See *supra* § VII.A.(4).a.ii).

b. Claim 3

i. wherein the second sensor package includes two level sensors for sensing a position of the payload platform in two perpendicular directions

Owner contends that the accelerometers **21**, **22** *are fixed* to the payload platform, however, they are not the second sensor package. (Mar I 2020 PO Response at 68-69). Specifically, Owner contends that the accelerometers **21**, **22** comprise the second sensor package with the second sensor package of *Bos* not correcting for the gyro drift of the first sensor package. (*Id.*)

With respect to the accelerometers **21**, **22** not being the second sensor package, and thus, not fixed to the platform, the Examiner respectfully disagrees. The Examiner finds this contention (*i.e.*, the synchros **10**, **11** not being the second sensor package) the same as previously set forth by Owner. (Mar I 2020 PO Response at 43-44). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(4).a.iii).

Additionally, with respect the synchro transmitters **12**, **13**, Owner has not provided a position that the synchro transmitters **12**, **13** of *Bos* do not satisfy the second sensor package claim requirement. However, the Examiner finds that the synchro transmitters **12**, **13** of *Bos* sufficiently satisfies the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2). To support the Examiner's position, the Examiner find that *Bos* discloses the gryo **10**/gyro housing**11**/platform **1** combination being held in a vertical position by misalignment voltages of the synchro transmitters **12**, **13**. (*Bos* at c.2, ll.23-39). The Examiner finds that *Bos* discloses the position/orientation sensing being based on the predetermined position of the platform **1** which is based upon the preset vertical position of the gyro **10** relative to the spin axis directed normal to

the earth's surface, thus, the sensing and providing of positional/orientational misalignment voltages by synchro transmitters **12**, **13** is relative to set predetermined position. (*Id.* at c.1, ll.25-29; c.2, ll.5-9, 26-32). Thus, since the vertical position misalignment voltages of the platform **1** are provided by the synchro transmitters **12**, **13** and used to maintain the preset vertical position of the platform **1**, the Examiner concludes and maintains that the synchro transmitters **12**, **13** of *Bos* sufficiently satisfies the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2).

c. Claim 4

i. wherein the second sensor package is mounted on the payload platform

Owner contends that the synchro transmitters **12**, **13** and accelerometers **21**, **22** *are mounted* to the platform **3**, however, they are not the second sensor package. (Mar I 2020 PO Response at 70).

The Examiner finds that Owner does not challenge and agrees that *Bos* discloses the second sensor package being mounted on the platform. (See *id.* at p.70, ll.1588-1589). The Examiner will hereby rely on Owner's statements regarding agreement with *Bos* disclosing the second sensor package being mounted on the platform to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

However, with respect to the synchro transmitters **12**, **13** and accelerometers **21**, **22** not being the second sensor package, and thus, not mounted on the platform, the Examiner

respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 63, 66-69). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(4).a.iii-iv).

d. Claim 14

i. Element 14a - [a] method of stabilizing and self correcting a camera platform comprising:

While Owner agrees that the gyro stabilization system **26** provides stabilization for the stabilized platform and is thus the first sensor package, Owner contends the first sensor package of *Bos* would not be acceptable for uses on a camera boat for motion picture filming. (Mar I 2020 PO Response at 70-71). Owner contends that the location of the stabilization system and its infrastructure requirements would be impractical when filming requires moving from on boat to another. (*Id.*) Owner contends that "*it would not be obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate* the stabilization scheme aimed to solve the problem of ship flexure for a radar installation on a large ship, into a single package, lightweight stabilization system for use on small boats ranging from 12' on up, for motion picture camera filming" (emphasis added)[34]." (*Id.* at 71).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 65). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(4).a.ii).

[34] The Examiner finds that claim 14 was rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by *Bos* and not under pre-AIA 35 U.S.C. 103(a) as being unpatentable over *Bos*. Thus, the Examiner finds the "lack-of-obviousness" statement as misplaced.

ii. Element 14b - positioning a stabilized camera platform on a moving object

While Owner agrees that the gyro stabilization system **26** provides stabilization for the stabilized platform and is thus the first sensor package, Owner contends the first sensor package of *Bos* would not be acceptable for uses on a camera boat for motion picture filming. (Mar I 2020 PO Response at 72). Owner contends that the location of the stabilization system and its infrastructure requirements would be impractical when filming requires moving from on boat to another. (*Id.*) Owner contends that "*it would not be obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate* the stabilization scheme aimed to solve the problem of ship flexure for a radar installation on a large ship, into a single package, lightweight stabilization system for use on small boats ranging from 12' on up, for motion picture camera filming" (emphasis added)[35]." (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 65, 70-71). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(4).a.ii,).

[35] The Examiner finds that claim 14 was rejected under pre-AIA 35 U.S.C. 102(b) as anticipated by *Bos* and not under pre-AIA 35 U.S.C. 103(a) as being unpatentable over *Bos*. Thus, the Examiner finds the "lack-of-obviousness" statement as misplaced.

iii. Element 14c - stabilizing the payload platform in at least two dimensions based on information collected by a first sensor package sensing motion of the moving object independent of motion of the payload platform

The Examiner finds that Owner does not challenge and agrees that *Bos* discloses element *14c* of claim 14's requirements. (See Mar I 2020 PO Response at 73). The Examiner will hereby rely on Owner's statements regarding agreement with *Bos* disclosing element *14c* of claim 14's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

iv. Elements 14d - sensing by a second sensor package, which is fixed to the payload platform, a position of the payload platform relative to a predetermined position; and 14e - self correcting the position of the payload platform to the predetermined position based on information collected by the second sensor package.

Owner contends that the encoders **16**, **17** of *Bos* are not level sensors and do serve to correct errors such as gyro drift in the first sensor package. (Mar I 2020 PO Response at 74). Owner also contends that *Bos* does not anticipate this limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (*Id.*)

The Examiner respectfully disagrees. First, the Examiner has not taken the position that encoders **16**, **17** are the second sensor package. The Examiner has taken the position that synchro

transmitters **12**, **13** and accelerometers **21**, **22** are the second sensor package. (See §§ VI.D.(1).claim 14.d-e *supra*). Thus, the argument is deemed misplaced and moot.

However, to the degree Owner meant to cite accelerometers **21**, **22** instead of encoders **16**, **17**, the Examiner finds this contention the same as previously set forth by Owner. (*Id*. at 66-67). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(4).a.iii,).

e. Claim 31

i. Elements 31a-31d

The Examiner finds that Owner provided no arguments with respect to the Elements 31a-31d. (See Mar I 2020 PO Response at 75-78).

The Examiner finds that the Mar I 2020 PO Response is a *bona fide* attempt to advance the reexamination proceeding to final action, but contains a minor deficiency (e.g., fails to treat every rejection, objection, or requirement). (See MPEP § 2666.01). Thus, the Mar I 2020 PO Response is moot with respect to claim 31 and the Examiner reiterates the rejection for claim 31 over *Bos supra*. (*Id*.)

However, the Examiner finds that some of the limitations of claim 31 are similar to that of claim 14. Thus, in order to expedite prosecution, the Examiner deems the arguments provided for claim 14 elements that are similar to claim 31 elements can be applied to claim 31. The Examiner finds these contentions the same as previously set forth by Owner. (*Id*. at 70-75). Thus, the Examiner finds these arguments addressed above. (See *supra* §§ VII.A.(4).d.i-iv,).

f. Claim 32

i. Elements 32a-32d, 32g

The Examiner finds that Owner does not challenge and agrees that *Bos* discloses elements *32a-32d* and *32g* of claim 32's requirements. (See Mar I 2020 PO Response at 78-79, 81). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing elements *32a-32d* and *32g* of claim 32's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 32e - a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted

While Owner agrees that the gyro stabilization system **26** provides stabilization for the stabilized platform and is thus the first sensor package, Owner contends the first sensor package of *Bos* would not be acceptable for uses on a camera boat for motion picture filming. (Mar I 2020 PO Response at 65). Owner contends that the location of the stabilization system and its infrastructure requirements would be impractical when filming requires moving from on boat to another. (*Id.*) Owner contends that a person of ordinary skill in the art would not look at this type of stabilization scheme for a motion picture stabilizer. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 65). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(4).a.ii).

iii. Element 32f - a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

Owner contends that the second sensor package should be "a level sensor." (Mar I 2020 PO Response at 63, ll.1436-1437). Owner contends that the accelerometers **21**, **22** of *Bos* are not the required second sensor package because they do provide correction to the first sensor package. (Mar I 2020 PO Response at 80). Owner also contends that *Bos* does not anticipate this limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (*Id.* at 80-81).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 66). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(4).a.iii).

iv. Element 32h - wherein the second sensor package is fixed to the payload platform, and

Owner contends that the accelerometers **21**, **22** *are fixed* to the payload platform, however, they are not the second sensor package. (Mar I 2020 PO Response at 82). Specifically, Owner contends that the accelerometers **21**, **22** comprise the second sensor package with the second sensor package of *Bos* not correcting for the gyro drift of the first sensor package. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 67). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(4).a.iv).

v. Element 32i - wherein the control system allows a user to set an initial payload platform position and provides self correction of the platform to the initial position

Owner contends that *Bos* does not anticipate this limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (Mar I 2020 PO Response at 82)

The Examiner respectfully disagrees. In response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which applicant relies (*i.e.*, *an operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of

the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In this light, the Examiner finds that the '662 Patent discloses the preset position being "with respect to the earth's horizon and a magnetic course heading." ('662 Patent at c.4, ll.58-61). Thus, in view of the teachings of the '662 Patent, the Examiner concludes that the '662 Patent provides sufficient evidence to the fact that prior art disclosing an embodiment in which a control system allows a user to set of any position that is relative to the earth's horizon and a magnetic course heading would sufficiently meet the "*control system allows a user to set an initial payload platform position*" claim requirement.

From this perspective, the Examiner finds that *Bos* discloses a predetermined position of the platform **1** being set and based on the vertical position of the gyro **10** relative to the spin axis directed normal to the earth's surface. (*Bos* at c.2, ll.4-9, 23-26, 45-49). The Examiner finds that the setting of an initial position of the platform **1** of *Bos* inherently includes an operator choosing a position for viewing and/or information capture that is offset from the initial platform preset-travel position. When the vertical position of the gyro **10** is brought into a desired vertical position to the earth's normal axis, the Examiner finds that the platform **1** would be positioned level to the earth's horizon and inherently have a magnetic course heading. Thus, in light of the '662 patent's disclosure to setting a preset position to the earth's horizon and magnetic course heading, the Examiner finds that *Bos* discloses the stabilization system allowing a user to set an initial payload platform position.

g. Claim 35

i. Elements 35a-35d, 35g

The Examiner finds that Owner does not challenge and agrees that *West* discloses elements *35a-35d* and *35g* of claim 35's requirements. (See Mar I 2020 PO Response at 83-84, 86). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing elements *35a-35d* and *35g* of claim 35's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 35e - a first sensor package for determining, in two transverse directions, motion of a moving object on which the stabilized platform is mounted

While Owner agrees that the gyro stabilization system **26** provides stabilization for the stabilized platform and is thus the first sensor package, Owner contends the first sensor package of *Bos* would not be acceptable for uses on a camera boat for motion picture filming. (Mar I 2020 PO Response at 84). Owner contends that the location of the stabilization system and its infrastructure requirements would be impractical when filming requires moving from on boat to another. (*Id.*) Owner contends that a person of ordinary skill in the art would not look at this type of stabilization scheme for a motion picture stabilizer. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 65, 79). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(4).a.ii).

iii. Element 35f - a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

Owner contends that the second sensor package should be "a level sensor." (Mar I 2020 PO Response at 63, ll.1436-1437). Owner contends that the accelerometers **21**, **22** of *Bos* are not the required second sensor package because they do provide correction to the first sensor package. (Mar I 2020 PO Response at 85). Owner also contends that *Bos* does not anticipate this limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 66, 80-81). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(4).a.iii).

iv. Element 35h - wherein the second sensor package is fixed to the payload platform, and

Owner contends that the accelerometers **21**, **22** *are fixed* to the payload platform, however, they are not the second sensor package. (Mar I 2020 PO Response at 87). Specifically, Owner contends that the accelerometers **21**, **22** comprise the second sensor package with the second sensor package of *Bos* not correcting for the gyro drift of the first sensor package. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 67, 82). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(4).a.iv).

v. Element 35i - wherein the first sensor package comprises sensors for sensing a different type of information from the sensor means in the second sensor package

Owner agrees that *Bos* discloses 'voltage' sensed by the synchro transmitters **41**, **42** of gyro stabilization system **26** as being different from the 'voltage' sensed by the accelerometers **21**, **22**. (Mar I 2020 PO Response at 87). However, Owner contends that the sensors of *Bos* are not the first or second package of the '662 Patent, as previously discussed.[36] (*Id.*)

The Examiner finds that Owner does not challenge and agrees that *Bos* discloses the first and second sensor packages sensing different types of information. (See *Id.* at p.87, ll.1990-1992). The Examiner will hereby rely on Owner's statements regarding agreement with *Bos* disclosing the first and second sensor packages sensing different types of information to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

However, with respect to the contention that the synchro transmitters **41**, **42** are not the first sensor package and the accelerometers **21**, **22** not being the second sensor package, the Examiner respectfully disagrees. The Examiner finds this contention the same as previously set

[36] Owner only asserts that the "first sensor package" is of issue. However, in order to expedite prosecution, the Examiner will address both the "first and second sensor packages."

forth by Owner. (*Id*. at 65, 79, 84; and 66, 80-81, 85). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(4).a.ii-iii).

h. Claim 38 [37]

i. Element 38h - wherein the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package

Owner contends that even though the data rates of *West*[38] may be faster or slower, *West* is not solving the same problem as the '662 Patent because stabilization in space is non-analogous to stabilization on earth. (Mar I 2020 PO Response at 89).

The Examiner finds that Owner does not challenge and agrees that *West* discloses the control system responding to information from the first sensor package more often than the control system responds to information from the second sensor package. (See *Id*. at p.34, ll.769-770). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

[37] The Mar I 2020 PO Response only addresses the "*wherein the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package*" claim requirement of claim 38. (See Mar I 2020 PO Response at 89). However, the Examiner finds that *Bos* sufficiently discloses elements "38a-38h" as indicated in the instant Office action at §§ VII.A.(4).a-h; and VI.D.(2); and the Dec 2019 Non-Final Office Action at § VII.D.(2).

[38] Owner agrees, that *West*, *Wessling* and *Hartmann* are the same stabilized pointing system. (Mar I 2020 PO Response at 89). Therefore, as set forth *infra*, the Examiner cites to *West* for the analogous argument response.

However, with respect to the contention that *West* is nonanalogous art, it has been held that a prior art reference must either be in the field of Owner's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the Examiner finds that *West* is analogous because it is in the field of Owner's endeavor and reasonably pertinent to the particular problem with which Owner was concerned.

First, the Examiner finds that Owner's field of endeavor is a self-leveling stabilizing platform that compensates for motion caused by waves, currents, wind and other motion during land, air and sea operations of a camera." ('662 Patent at Abstract; c.3, ll.7-9). While the Examiner agrees that *West* is directed to space applications, the Examiner finds that *West* is still in Owner's field of endeavor because *West* is directed a three-axis stabilized instrument pointing system (IPS) that was developed to point instruments with stability and accuracy. (*West* at §§ I, ¶¶ 1-3; see Figure 1). Thus, the Examiner reasonably concludes that *West* is in the field of Owner's endeavor.

In addition, the Examiner finds that *West* is reasonably pertinent to the particular problem with which the applicant was concerned. The Examiner finds that Owner's invention is to utilize two independent sensor packages located respectively on a base and payload platform to provide self leveling or self correcting. ('662 Patent at Abstract; c.4, ll.62-67).

In this light, the Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8**,

GP **18** and OSP **24**, respectively, and controls the stabilization of the payload. (*Id.*) The Examiner finds that the digital controller receives feedback from the ACP **8** and GP **18** to provide a first fast control loop (*i.e.*, 25 Hz). (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the OSP **24**/ADF to provide a second slow control loop (*i.e.*, 1 Hz) to compensate for attitude updates and system drift estimates. (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3, 11). Thus, the Examiner reasonably concludes that *West* is reasonably pertinent to the particular problem with which the applicant was concerned.

Therefore, the Examiner concludes and maintains that *West*, *Wessling* and *Hartmann* are analogous art.

(5) Ground 5: Vaassen

a. Claim 1

i. Elements 1a-1e, 1g

The Examiner finds that Owner does not challenge and agrees that *Vaassen* discloses elements *1a-1e* and *1g* of claim 1's requirements. (See Mar I 2020 PO Response at 90-92, 93). The Examiner will hereby rely on Owner's statements regarding agreement with *Vaassen* disclosing elements *1a-1e* and *1g* of claim 1's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Element 1f - a second sensor package comprising sensor means for sensing a position of the payload platform and for providing information based on the position of the payload platform relative to a predetermined position; and

Owner contends that the encoders/gyrochips **16**, **17** of *Vaassen* are not level sensors because they do not sense the horizon or the vector of earth's gravity. (Mar I 2020 PO Response at 92-93). Owner contends the encoders of *Vaassen* are similar to that of *Welch* (U.S. Patent No. 5,922,039) and since the Office previously determined that the sensors of *Welch* were not level sensors, *Vaassen's* encoders cannot be level sensors. (*Id.*) Owner contends that *Vaassen* does not anticipate this limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (*Id.* at 42-43).

The Examiner respectfully disagrees. First, in response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which applicant relies (*i.e.*, *a sensor package being level sensors*; *level sensor must sense the horizon or the vector of earth's gravity*; and *predetermined position is an angled or offset of the payload platform with respect to a horizon*; *a small camera stabilizer usable device*) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For

example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Moreover, with respect the second sensor package being required to be level sensors, the Examiner respectfully disagrees. The Examiner finds that the second sensor package is a second group of sensor elements that *comprises* the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2). The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Mars Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004). (MPEP § 2111.03.I). Thus, the Examiner finds that the second sensor package may include other sensors, notwithstanding level sensors, in addition to the FP2.

Furthermore, the Examiner finds that the FP2 is not solely limited to "level sensors." While the *Voice v OCR II* Court construed FP2 to be "one or more level sensors of the second sensor package," the Examiner finds that "[a] reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments." *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). The Examiner finds that the '662 Patent clearly and sufficiently discloses the second sensor package including one or more motion sensors to provide

position feedback, *with a preference to level sensors*. ('662 Patent at c.4, ll.40-43). The Examiner finds that the '662 Patent provides "rate sensors, gyroscopic sensors, fiber optic sensors or other sensors" as examples of motion sensors. (*Id*. at c.4, ll.28-29). The Examiner notes that a gyroscope measures the rate of rotation around a particular axis which it is associated with, thus, providing an indication of the orientation/position of the element the gyroscope is affixed thereto. Moreover, the Examiner finds that the '662 Patent provides evidence to the fact that "motion sensors" such as "rate sensors, gyroscopic sensors, fiber optic sensors or other sensors" provide both motion and position feedback. (*Id*. at c.4, ll. 27-30, 40-42). Thus, in view of the teachings of that the '662 Patent, the Examiner concludes that the '662 Patent provides sufficient evidence to the fact that prior art disclosing an embodiment in which a second group of sensor elements includes one or more motion sensor or level sensor, would sufficiently meet the "*second sensor package*" claim requirement.

In this light, and with respect the encoders/gyrochips **16**, **17**, the Examiner finds that the encoders/gyrochips **16**, **17** of *Vaassen* sufficiently satisfy the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2). The Examiner finds that the encoders/gyrochips **16**, **17** of *Vaassen* provide position/orientation information of a stabilization platform **8**, on which a search sensor is mounted thereon, based upon a desired/predetermined orientation the search sensor/stabilization platform **8** combination. To support the Examiner's position, the Examiner find that *Vaassen* discloses the encoders/gyrochips **16**, **17** being mounted on the stabilization platform **8** and measuring the *absolute* pitch and roll angle velocity of the stabilization platform **8** with respect to an inertial coordinate system. (*Vaassen* at Abstract; p.5, ll.6-17; see Figures 1A, 1B). The Examiner finds that the measured *absolute* pitch and roll angular velocities are delta/difference

orientation/position values based upon their own inertial coordinate systems which is independent from the north-horizontal coordinate system of the gyroscopes **12**. (See *Id*. at § p.7, ll.29-32 for rate measurements being transformed from an internal gyro coordinate system to the platform coordinate system). The Examiner finds that *Vaassen* discloses a search sensor being mounted on the stabilization platform **8** and the search sensor/ platform **8** combination would inherently be set to a predetermined position (*i.e.*, either determined by the actual mounting, or based on desired output from the sensor) based on the north-horizontal coordinate system of the earth's surface. (*Id*. at p.1, ll.20-23; p.4, ll.30-35). The Examiner finds that *Vaassen* discloses the inertial coordinate system being maintained horizontal by encoders/gyrochips **16**, **17** and the servo control unit **2**." (*Id*. at p.1, ll.20-23; p.4, ll.30-35; p.5, ll.4-11, 16-17). Thus, since the rate measurement of the stabilization platform **8** is provided by encoders/gyrochips **16**, **17** and used to maintain the horizontal position of the stabilization platform **8**, the Examiner concludes and maintains that encoders/gyrochips **16**, **17** of *Vaassen* sufficiently satisfies the structural requirements of the second sensor package including the "sensor means for sensing" (*i.e.*, Functional Phrase 2 or FP2).

Furthermore, with respect to Owner's contention that the encoders **16**, **17** of *Vaassen* measure shaft rotation and being similar to the potentiometers of *Welch*, the Examiner respectfully disagrees. The Examiner finds that the potentiometers of *Welch* are a completely different sensor that the encoders/gyrochips **16**, **17** of *Vaassen*. Vaassen explicitly discloses the encoders/gyrochips **16**, **17** measuring *absolute* pitch and roll angle velocity of the stabilization platform **8** that they are specifically mounted on while *Welch* teaches position sensors being precision potentiometers, optical encoders or resolvers. (*Welch* at c.8, ll.28-40). The Examiner finds the position sensors in *Welch* are utilized for positioning measurement of the shaft of a

motor.[39] Thus, the Examiner concludes that Owner's findings that the encoders/gyrochips **16**, **17** of *Vaassen* are not the "*second sensor package*" since they are comparable to position sensors of *Welch* is incorrect and misplaced.

iii. Element 1h - wherein the second sensor package is fixed to the payload platform, and

Owner contends that the encoders **16**, **17** *are fixed* to the payload platform, however, they are not the second sensor package. (Mar I 2020 PO Response at 94-95). Specifically, Owner contends that the encoders **16**, **17** comprise the second sensor package with the second sensor package of *Bos* not correcting for the gyro drift of the first sensor package. (*Id.*)

The Examiner respectfully disagrees. The Examiner finds that Owner does not challenge and agrees that *Vaassen* discloses the second sensor package being fixed to the platform. (See *Id.* at p.67, ll.1534-1535). The Examiner will hereby rely on Owner's statements regarding agreement with *Vaassen* disclosing the second sensor package being fixed to the platform to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

In response to Owner's argument that the references fail to show certain features of Owner's invention, it is noted that the features upon which Owner relies (*i.e.*, *second sensor package of Vaassen not correcting for the gyro drift of the first sensor package*;) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification,

[39] See ***Gerretz et al***. (U.S. Patent No. 5,291,108) at c.4, l.67 – c.5, l.13; see Figure 1.

limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, the Examiner finds that it is improper to import limitations from the specification into the claims. Specifically, "'[t]hough understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.' *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004)." (See MPEP 2111.01(II)). With respect to intended use of the claimed structure, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

With respect to the contention that the encoders **16**, **17** are not the second sensor package, and thus, not fixed to the platform, the Examiner respectfully disagrees. The Examiner finds this contention (*i.e.*, the encoders **16**, **17** not being the second sensor package) the same as previously set forth by Owner. (Mar I 2020 PO Response at 92-93). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(5).a.ii).

iv. Element 1i - the first sensor package is fixed with respect to the base

The Examiner finds that Owner provided no arguments with respect to the Element 1i. (See Mar I 2020 PO Response at 95). Owner introduced element 1i and stated what the Examiner found, but then went straight into an argument about claim 3 without arguing against the Examiner's findings.

The Examiner finds that the Mar I 2020 PO Response is a *bona fide* attempt to advance the reexamination proceeding to final action, but contains a minor deficiency (*e.g.*, fails to treat every rejection, objection, or requirement). (See MPEP § 2666.01). Thus, the Mar I 2020 PO Response is moot with respect to element 1i (*i.e.*, claim 1, element i) and the Examiner reiterates the rejection for element 1i of claim 1 over *Vaassen supra*. (*Id.*)

However, in order to expedite prosecution, the Examiner finds that *Vaassen* sufficiently meets the "*first sensor package is fixed with respect to the base*" claim requirement in accordance with *Phillips*. (See § VI.E,claim1.i *supra*). In addition, the Examiner finds that Owner does not challenge and agrees that *Vaassen* discloses element *1e* of claim 1's requirements. (See Mar I 2020 PO Response at 92).

b. Claim 3

i. wherein the second sensor package includes two level sensors for sensing a position of the payload platform in two perpendicular directions

Owner contends that the encoders **16**, **17** *are fixed* to the payload platform, however, they are not the second sensor package. (Mar I 2020 PO Response at 96). Specifically, Owner contends that the encoders **16**, **17** of *Vaassen* do not correcting for the gyro drift of the first sensor package. (*Id.*)

With respect to *Vaassen* not being the second sensor package, and thus, not fixed to the platform, the Examiner respectfully disagrees. The Examiner finds this contention (*i.e.*, *Vaassen* not being the second sensor package) the same as previously set forth by Owner. (Mar I 2020 PO

Response at 92-93). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(5).a.iii).

c. Claim 4

i. wherein the second sensor package is mounted on the payload platform

Owner contends that the encoders **16**, **17** *are mounted* to the platform **3**, however, they are not the second sensor package as discussed with respect to claim 3. (Mar I 2020 PO Response at 96).

The Examiner finds that Owner does not challenge and agrees that *Vaassen* discloses the second sensor package being mounted on the platform. (See *id.* at p.96, l.2206). The Examiner will hereby rely on Owner's statements regarding agreement with *Vaassen* disclosing the second sensor package being mounted on the platform to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

With respect to *Vaassen* not being the second sensor package, and thus, not mounted on the platform, the Examiner respectfully disagrees. The Examiner finds this contention (*i.e.*, *Vaassen* not being the second sensor package) the same as previously set forth by Owner. (Mar I 2020 PO Response at 92-93). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(5).a.iii).

d. Claim 14

i. Elements 14a-14c

The Examiner finds that Owner does not challenge and agrees that *West* discloses elements *14a-14c* of claim 14's requirements. (See Mar I 2020 PO Response at 97). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing elements *14a-14c* of claim 14's requirements to advance prosecution of this patent reexamination. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

ii. Elements 14d - sensing by a second sensor package, which is fixed to the payload platform, a position of the payload platform relative to a predetermined position; and 14e - self correcting the position of the payload platform to the predetermined position based on information collected by the second sensor package.

Owner contends that the encoders/gyrochips **16**, **17** of *Vaassen* are not level sensors because they do not sense the horizon or the vector of earth's gravity. (Mar I 2020 PO Response at 92-93). Owner contends the encoders of *Vaassen* are similar to that of *Welch* (U.S. Patent No. 5,922,039) and since the Office previously determined that the sensors of *Welch* were not level sensors, *Vaassen's* encoders cannot be level sensors. (*Id.*) Owner contends that *Vaassen* does not anticipate this limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (*Id.* at 42-43).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id*. at 92-93). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(5).a.ii).

e. Claim 31

i. Elements 31a-31d

The Examiner finds that Owner provided no arguments with respect to the Elements 31a-31d. (See Mar I 2020 PO Response at 99-102).

The Examiner finds that the Mar I 2020 PO Response is a *bona fide* attempt to advance the reexamination proceeding to final action, but contains a minor deficiency (e.g., fails to treat every rejection, objection, or requirement). (See MPEP § 2666.01). Thus, the Mar I 2020 PO Response is moot with respect to claim 31 and the Examiner reiterates the rejection for claim 31 over *Vaassen supra*. (*Id*.)

However, the Examiner finds that the limitations of claim 31 are similar to that of claim 14. Thus, in order to expedite prosecution, the Examiner deems the arguments provided for claim 14 elements that are similar to claim 31 elements can be applied to claim 31. The Examiner finds these contentions the same as previously set forth by Owner. (*Id*. at 97-99). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(5).d.i-ii,).

f. Claim 32

i. Elements 32a-32g, 32i

The Examiner finds that Owner provided no arguments with respect to the Elements 32a-32g and 32i. (See Mar I 2020 PO Response at 102-104, 105-106).

The Examiner finds that the Mar I 2020 PO Response is a *bona fide* attempt to advance the reexamination proceeding to final action, but contains a minor deficiency (e.g., fails to treat every rejection, objection, or requirement). (See MPEP § 2666.01). Thus, the Mar I 2020 PO Response is moot with respect to Elements 32a-32g and 32i of claim 32 and the Examiner reiterates the rejection for Elements 32a-32g and 32i of claim 32 over *Vaassen supra*. (*Id.*)

However, the Examiner finds that the limitations of claim 32 are similar to that of claim 1. Thus, in order to expedite prosecution, the Examiner deems the arguments provided for claim 1 elements that are similar to claim 32 elements can be applied to claim 32. The Examiner finds these contentions the same as previously set forth by Owner. (*Id.* at 92-96). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(5).a.i-iv,).

ii. Element 32h - wherein the second sensor package is fixed to the payload platform, and

Owner contends that the encoders/gyrochips **16**, **17** of *Vaassen* are not level sensors because they do not sense the horizon or the vector of earth's gravity. (Mar I 2020 PO Response at 92-93). Owner contends that *Vaassen* does not anticipate this limitation because there is no indication that the operator sets a predetermined position that is an angled or offset of the payload platform with respect to a horizon. (*Id.* at 105).

The Examiner respectfully disagrees. The Examiner finds this contention the same as previously set forth by Owner. (*Id.* at 92-93). Thus, the Examiner finds this argument addressed above. (See *supra* § VII.A.(5).a.ii).

g. Claim 35

i. Elements 35a-35i

The Examiner finds that Owner provided no arguments with respect to the Elements 35a-35i. (See Mar I 2020 PO Response at 106-110).

The Examiner finds that the Mar I 2020 PO Response is a *bona fide* attempt to advance the reexamination proceeding to final action, but contains a minor deficiency (e.g., fails to treat every rejection, objection, or requirement). (See MPEP § 2666.01). Thus, the Mar I 2020 PO Response is moot with respect to claim 35 and the Examiner reiterates the rejection for claim 35 over *Vaassen supra*. (*Id.*)

However, the Examiner finds that the limitations of claim 35 are similar to that of claim 1. Thus, in order to expedite prosecution, the Examiner deems the arguments provided for claim 1 elements that are similar to claim 35 elements can be applied to claim 35. The Examiner finds these contentions the same as previously set forth by Owner. (*Id.* at 92-96). Thus, the Examiner finds this argument addressed above. (See *supra* §§ VII.A.(5).a.i-iv,).

h. Claim 38 [40]

[40] The Mar I 2020 PO Response only addresses the "*wherein the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package*" claim requirement of claim 38. (See Mar I 2020 PO Response at 111-112). However, the Examiner finds that

i. Element 38h - wherein the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package

Owner contends that even though the data rates of *West*[41] may be faster or slower, *West* is not solving the same problem as the '662 Patent because stabilization in space is non-analogous to stabilization on earth. (Mar I 2020 PO Response at 111-112).

The Examiner finds that Owner does not challenge and agrees that *West* discloses the control system responding to information from the first sensor package more often than the control system responds to information from the second sensor package. (See *Id.* at p.34, ll.769-770). The Examiner will hereby rely on Owner's statements regarding agreement with *West* disclosing the control system responds to information from the first sensor package more often than the control system responds to information from the second sensor package. See 37 C.F.R. § 1.104(c) (3) which states in part: "the examiner may rely upon admissions by … patent owner … as to ***any matter*** affecting patentability …. [Emphasis added.]"

However, with respect to the contention that *West* is nonanalogous art, it has been held that a prior art reference must either be in the field of Owner's endeavor or, if not, then be reasonably pertinent to the particular problem with which the Owner was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the Examiner finds that *West* is analogous

Vaassen sufficiently discloses elements "38a-38h" as indicated in the instant Office action at §§ VII.A.(5).a-h; and VI.E.(2); and the Dec 2019 Non-Final Office Action at § VII.E.(2).

[41] Owner agrees, that *West*, *Wessling* and *Hartmann* are the same stabilized pointing system. (Mar I 2020 PO Response at 111). Therefore, as set forth *infra*, the Examiner cites to *West* for the analogous argument response.

because it is in the field of Owner's endeavor and reasonably pertinent to the particular problem with which Owner was concerned.

First, the Examiner finds that Owner's field of endeavor is a self-leveling stabilizing platform that compensates for motion caused by waves, currents, wind and other motion during land, air and sea operations of a camera." ('662 Patent at Abstract; c.3, ll.7-9). While the Examiner agrees that *West* is directed to space applications, the Examiner finds that *West* is still in Owner's field of endeavor because *West* is directed a three-axis stabilized instrument pointing system (IPS) that was developed to point instruments with stability and accuracy. (*West* at §§ I, ¶¶ 1-3; see Figure 1). Thus, the Examiner reasonably concludes that *West* is in the field of Owner's endeavor.

In addition, the Examiner finds that *West* is reasonably pertinent to the particular problem with which the Owner was concerned. The Examiner finds that Owner's invention is to utilize two independent sensor packages located respectively on a base and payload platform to provide self-leveling or self correcting. ('662 Patent at Abstract; c.4, ll.62-67).

In this light, the Examiner finds that *West* discloses the IPS utilizing an adaptable multirate, multivariable digital control system to control the torque drive units (DU's) [7] (cross elevation drive unit **11**, elevation drive unit **12**, roll drive unit **15**). (*West* at §§ I, ¶¶ 2-3; II.B, ¶ 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the ACP **8**, GP **18** and OSP **24**, respectively, and controls the stabilization of the payload. (*Id.*) The Examiner finds that the digital controller receives feedback from the ACP **8** and GP **18** to provide a first fast control loop (*i.e.*, 25 Hz). (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3). The Examiner finds that the digital controller receives feedback from the OSP **24**/ADF to provide a second slow control loop (*i.e.*, 1 Hz) to compensate for attitude updates and system

drift estimates. (*West* at §§ I, ¶¶ 2-3; II.B, ¶¶ 2-3, 5; II.C, ¶¶ 2-3, 11). Thus, the Examiner reasonably concludes that *West* is reasonably pertinent to the particular problem with which the Owner was concerned.

Therefore, the Examiner concludes and maintains that *West*, *Wessling* and *Hartmann* are analogous art.

VIII. Conclusion

THIS ACTION IS MADE FINAL.

A shortened statutory period for response to this action is set to expire *TWO (2) MONTHS* from the mailing date of this action.

Extensions of time under 37 C.F.R. § 1.136(a) do not apply in reexamination proceedings. The provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Further, in 35 U.S.C. 305 and in 37 CFR 1.550(a), it is required that reexamination proceedings "will be conducted with special dispatch within the Office."

Extensions of time in reexamination proceedings are provided for in 37 C.F.R. § 1.550(c). A request for extension of time must be filed on or before the day on which a response to this action is due, and it must be accompanied by the petition fee set forth in 37 C.F.R. § 1.17(g). The mere filing of a request will not effect any extension of time. An extension of time will be granted only for sufficient cause, and for a reasonable time specified.

The filing of a timely first response to this final rejection will be construed as including a request to extend the shortened statutory period for an additional month, which will be granted even if previous extensions have been granted. In no event however, will the statutory period for response expire later than SIX MONTHS from the mailing date of the final action. See MPEP § 2265.

The patent owner is reminded of the continuing responsibility under 37 C.F.R. § 1.565(a), to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 6,611,662 throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

All correspondence relating to this ex parte reexamination proceeding should be directed:

By Mail to: Mail Stop *Ex Parte* Reexam
Central Reexamination Unit
Commissioner for Patents
United States Patent & Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

By FAX to: (571) 273-9900
Central Reexamination Unit

By hand: Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

By EFS-Web:

Registered users of EFS-Web may alternatively submit such correspondence via the electronic filing system EFS-Web, at

https://efs.uspto.gov/efile/myportal/efs-registered

EFS-Web offers the benefit of quick submission to the particular area of the Office that needs to act on the correspondence. Also, EFS-Web submissions are "soft scanned" (i.e., electronically uploaded) directly into the official file for the reexamination proceeding, which offers parties the opportunity to review the content of their submissions after the "soft scanning" process is complete.

Any inquiry concerning this communication or earlier communications from the Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be directed to the Central Reexamination Unit at telephone number (571) 272-7705.

/Stephen J. Ralis/
Primary Examiner, Art Unit 3992

Conferees:

/LUKE S WASSUM/
Primary Examiner, Art Unit 3992

/HETUL B PATEL/
Supervisory Patent Examiner, Art Unit 3992

SJR
9/15/2020

Office Action in Ex Parte Reexamination	Control No. 90/014,342	Patent Under Reexamination	
	Examiner STEPHEN J RALIS	Art Unit 3992	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

a. ☑ Responsive to the communication(s) filed on 16 March 2020.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

b. ☑ This action is made FINAL.

c. ☐ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire _____ month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).** If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☐ Information Disclosure Statement, PTO/SB/08.
3. ☐ Interview Summary, PTO-474.
4. ☐ _____.

Part II SUMMARY OF ACTION

1a. ☑ Claims 1,3-4,14,31-32,35 and 38 are subject to reexamination.

1b. ☑ Claims 2,5-13,15-30,33-34,36-37 and 39-67 are not subject to reexamination.

2. ☐ Claims _____ have been canceled in the present reexamination proceeding.

3. ☐ Claims _____ are patentable and/or confirmed.

4. ☑ Claims 1,3-4,14,31-32,35 and 38 are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ The drawings, filed on _____ are acceptable.

7. ☐ The proposed drawing correction, filed on _____ has been (7a) ☐ approved (7b) ☐ disapproved.

8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have

1 ☐ been received.

2 ☐ not been received.

3 ☐ been filed in Application No. _____.

4 ☐ been filed in reexamination Control No. _____.

5 ☐ been received by the International Bureau in PCT application No. _____.

* See the attached detailed Office action for a list of the certified copies not received.

9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte* Quayle, 1935 C.D. 11, 453 O.G. 213.

10. ☐ Other: _____

cc: Requester (if third party requester)

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90/014,342	6611662
	Examiner	Art Unit
	STEPHEN J RALIS	3992

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Reviewed proposed prior art and patent prosecution history	08/21/2019	SR
Reviewed proposed prior art and patent prosecution history	08/27/2020	SR

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

Reexamination	Application/Control No.	Applicant(s)/Patent Under Reexamination
	90/014,342	6611662
	Certificate Date	Certificate Number

Requester Correspondence Address: ☐	Patent Owner ☑	Third Party

MARK YOUNG P.A (GENERAL)
1638 CAMDEN AVE.
JACKSONVILLE, FL 32207

LITIGATION REVIEW ☐	SR (examiner initials)	31 March 2020 (date)
Case Name		Director Initials
(CLOSED) David Grober V. Mako Products Inc Et Al 2:04cv8604		
(OPEN) Voice International Inc Et Al V. Oppenheimer Cine Rentals Llc Et Al 2:15cv8830		
(CLOSED) Grober v. Mako Products, Inc 17-1507		
(UNKNOWN) David Grober, et al., Applicants v. Mako Products, Inc. 18a1036		

COPENDING OFFICE PROCEEDINGS	
TYPE OF PROCEEDING	NUMBER
None Found	
